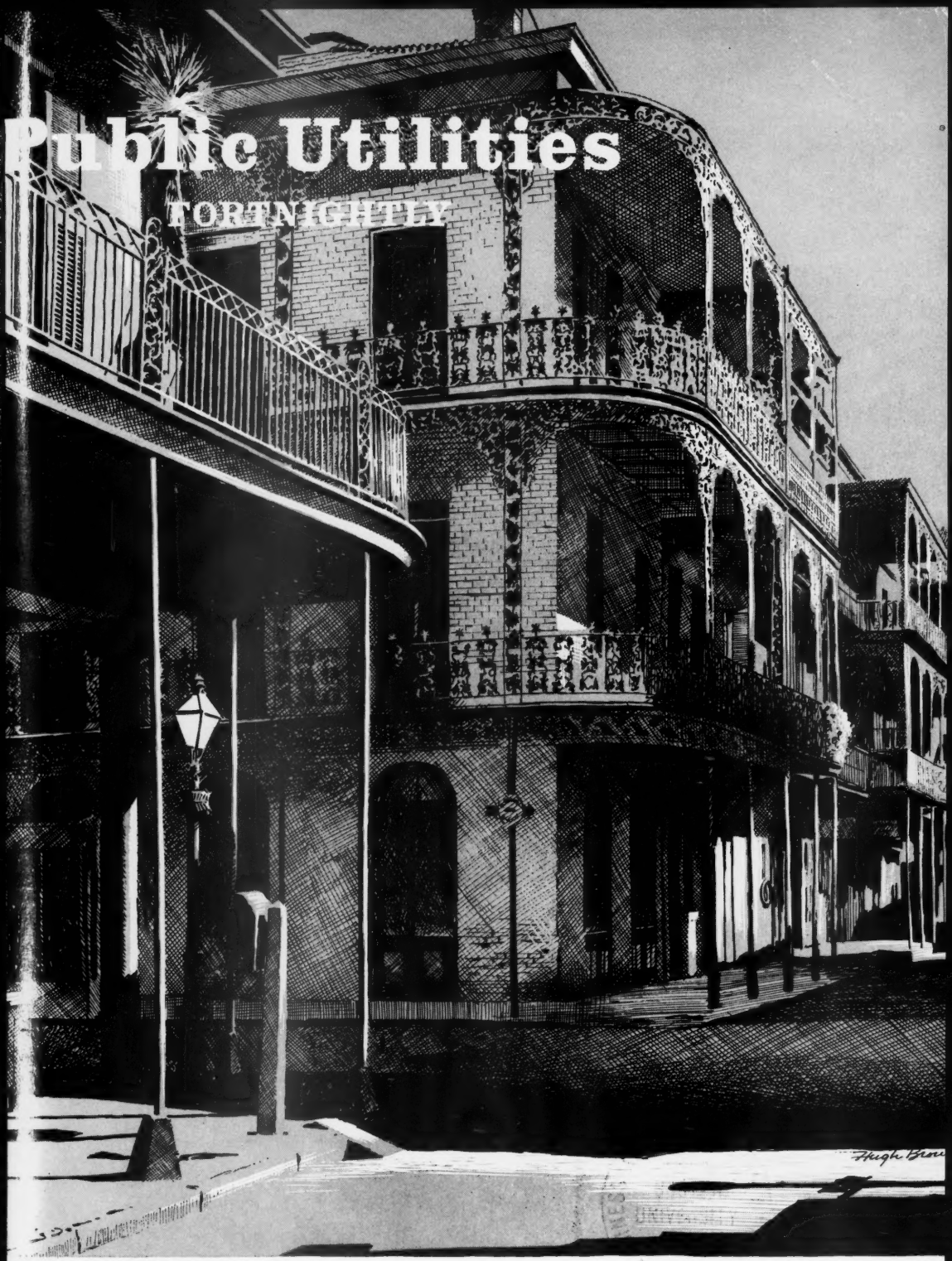
Public Utilities

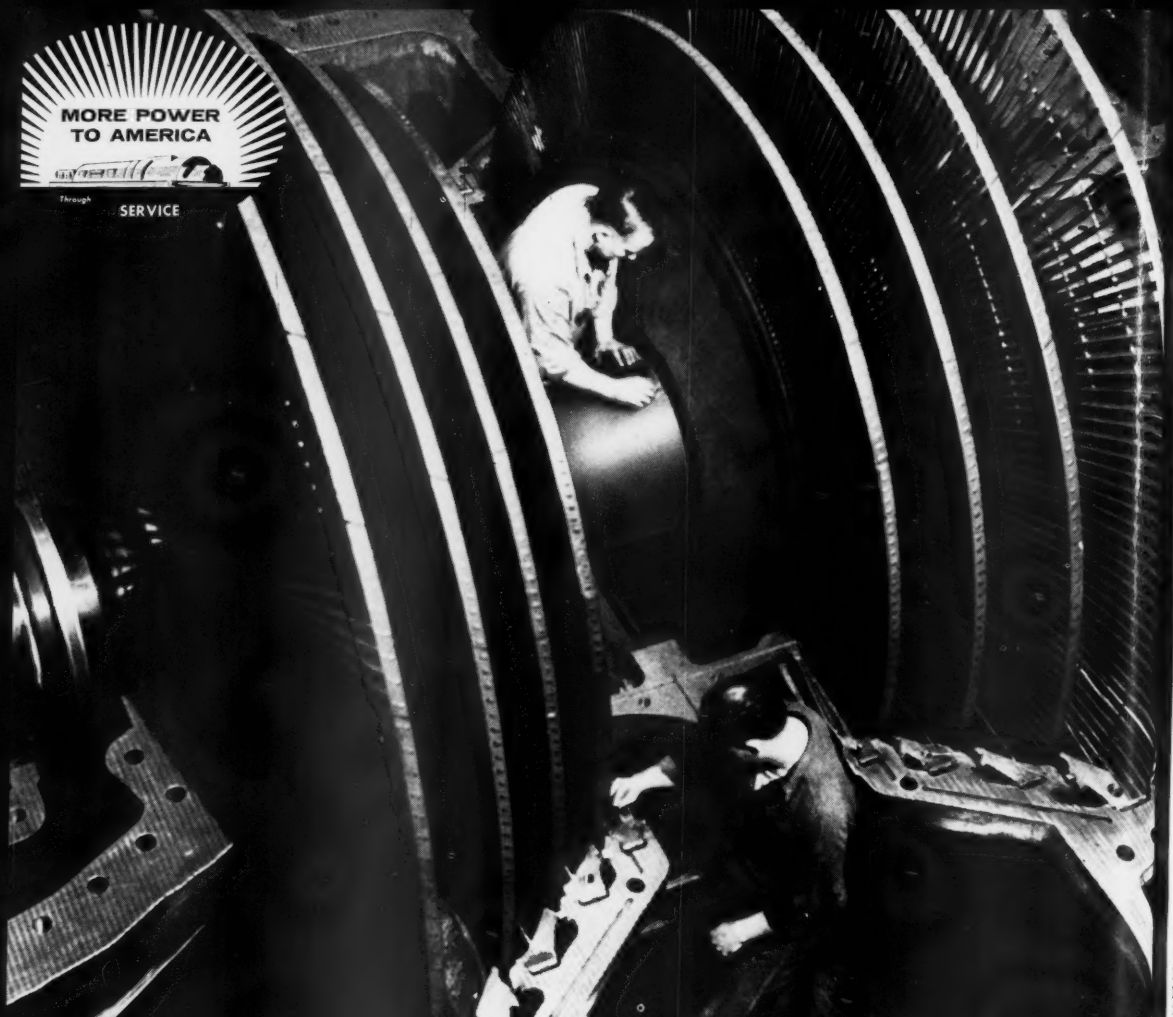
FORTNIGHTLY



GREETINGS—27TH EEI ANNUAL CONVENTION—APRIL 6-8, 1959, NEW ORLEANS, LOUISIANA

Electric Power for a Strong America

APRIL 9, 1959



urbine-generator *reliability* is the result of . . .

KNOW-HOW AND SERVICE

eliability contributes to determining the cost of power eneration and the need for system reserve capacity. A nit's reliability becomes increasingly important as larger- apacity turbine-generators are added to a system.

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Public Utilities FORTNIGHTLY

VOLUME 63 APRIL 9, 1959 NUMBER 8

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LEWIS and CLARK

New Lewis and Clark

The Montana-Dakota Utilities Co. recently put into operation the initial unit at its new Lewis and Clark Station.

Located two miles south of Sidney, Montana, on the bank of the Yellowstone River—where the historic Lewis and Clark exploration party journeyed—this is the largest and most modern generating station of the system. Its turbine-generator, rated at 44,000 kw, increases MDU's new generating capability by nearly 50 per cent. The station was designed and constructed by Ebasco Services, Inc.

This new station, the first in which MDU has used pulverized fuel, is presently the largest "raw" lignite plant in the United States and Canada. The lignite is delivered by rail directly from a new strip mine approximately 24 miles away.

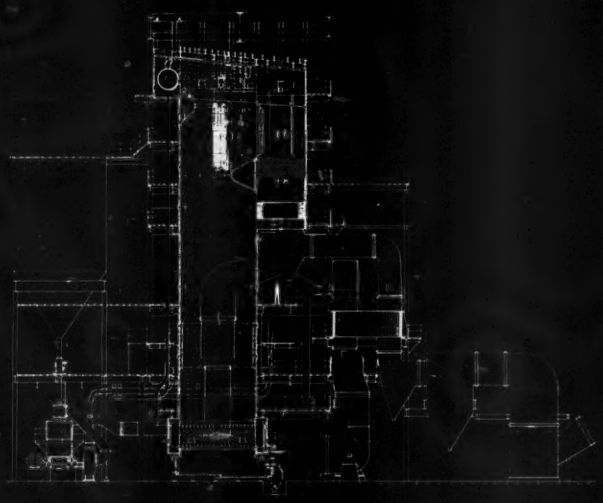
Furnishing steam for the Lewis and Clark Station is a Combustion Engineering Steam Generating Unit capable of delivering 425,000 pounds of steam per hour. A cross-sectional elevation and brief description of this boiler appear on the opposite page.

C

ALL TY
PAPER

Station

NOW IN SERVICE



The C-E Unit shown above is now in service at the Lewis and Clark Station. It is a radiant-type boiler with a plain-tube, skin-cased furnace. The superheater is of the multi-stage type, with secondary and finishing surface at the furnace exit and primary surface in the rear pass. Economizer surface is located below the rear superheater surface, and a regenerative air heater follows the economizer. The unit is designed to burn lignite and/or natural gas, using bowl mills and tilting, tangential burners. It supplies steam at 1350 psig and 955 F.

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C-E

C-201

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Pages with the Editors

FOLLOWING our annual custom, this issue is designed to be of special interest to our many friends and readers in the electric utility industry and will be released contemporaneously with the twenty-seventh annual convention of the Edison Electric Institute. This national assembly of the electric utility industry comes early this year, and in a city which has not previously been host to such a gathering. But those who plan such things did well in picking a fortunate coincidence of time and place, as anyone who has ever spent an early spring in the Crescent city would be happy to testify. And so with this issue we salute the thousands of delegates and others attending the Edison Electric Institute convention and wish them a pleasant and profitable assembly.

THE electric utility industry is no stranger to critical periods even though it is less than a century old—young by standards of comparison with other industries and some of the other utilities. But this year 1959 should certainly rank as one of the more important dates in the annals of the electric utility companies. Under the double pressure of terrific demand requiring phenomenal expansion, and a continuous inflationary rise in the cost of plant and of doing business, the electric companies are still bedeviled by quasi-political problems, such as its relationship with the federal government in atomic power plant development, TVA and REA financing, and other perennial headaches on the Washington front.

J. E. CORETTE

ALBERT GORE

BUT the electric industry has always in the past met the difficult challenges of its time, and has always gone on to greater strength and achievement in the public interest. The year 1959 and those to follow will not be exceptions.

THE leading article in this issue is a special message to our readers from the retiring president of the Edison Electric Institute, J. E. CORETTE, who is also president of The Montana Power Company. Born in Butte and a graduate of Montana State University, MR. CORETTE took his law degree at the University of Virginia (LLB, '30). He practiced in Montana until 1934 when he became associated with The Montana Power Company, first as a practicing attorney and in 1944 as vice president and general manager. He has been president since 1952.

* * * *

THE article on "The Vast Potential of More Power Usage," which begins

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on page 513, comes to us from another chief executive in the electric industry—this one from the manufacturing branch. The author is R. S. STEVENSON, president of the Allis-Chalmers Manufacturing Company of Milwaukee. MR. STEVENSON is a native of Seattle and a graduate of Washington State College (AB, '29).

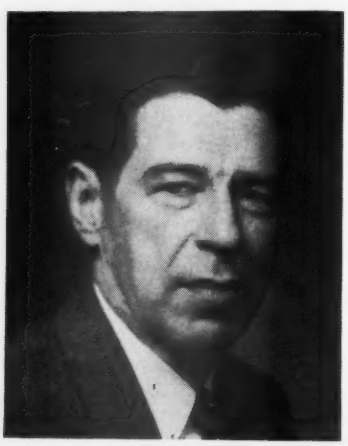
* * * *

THE U. S. Senator from Tennessee, ALBERT GORE, has been in the forefront of those seeking to have the United States play a more aggressive rôle in promoting nuclear power plants. His article, beginning on page 520, explains this.

THE Senator was born in Tennessee and attended the State Teachers College (BS, '32) before graduating from the YMCA Law School at Nashville (LLB, '36). He practiced law in Tennessee until his election to the House of Representatives in 1939. He was first elected to the United States Senate in 1952 and re-elected in 1958.

* * * *

REA ADMINISTRATOR DAVID A. HAMIL is the author of the article on long-range planning for rural co-operatives which begins on page 528. He is a native of Colorado and a graduate of Hastings College, Nebraska. He started in business with his brother as a cattle rancher in Colorado and also served in the Colorado legislature almost continuously from 1938 to 1951 when he became Speaker of the



R. S. STEVENSON

J. F. VAN RYSSELBERGE

House. He was appointed REA Administrator in 1956 by President Eisenhower.

* * * *

PAUL HALLINGBY, JR., whose article on stockholder relations of utility companies begins on page 533, is a general partner of White, Weld & Co., New York city, in charge of its public utility department. He was born in Los Angeles and graduated from Stanford University (AB, '41, *cum laude*) and Harvard University Graduate School of Business Administration. He had previously served with several New York financial organizations before joining his present firm in 1958.

* * * *

THE article on "Technical Economies in Belgium's Electric Operations" (beginning on page 541) comes to us from a Belgian civil engineer, J. F. VAN RYSSELBERGE, who is now a consulting engineer in Chicago. He was for a number of years (1929-46) associated with SOFINA, the largest public utility holding company in Europe. But he also traveled extensively in the United States and became an American citizen in 1946. From 1938 until recently he was also associated with the Middle West Service Company in Chicago.

THE next number of this magazine will be out April 23rd.

The Editors

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Coming IN THE NEXT ISSUE

(April 23, 1959, issue)

A NEW APPROACH TO NATURAL GAS PRODUCER REGULATION

Roger L. Conkling, an associate of H. Zinder & Associates, Inc., Washington, D. C., gas consultants, suggests that an alternative approach to natural gas producer regulation might be found in competitive bidding, since field prices of negotiated transaction prices vary from sale to sale. This price differential is an indication of arm's-length bargaining. The author reviews the difficulties of the so-called "cost" approach. He works out an interesting analogy in attempting to use the cost approach to the price of beefsteaks—not roasts or hamburgers or hides—just steaks. The parallel lies in the difficulty of segregating the cost of one cut of meat from total cattle production, which is comparable to the problem of determining the cost of natural gas production as part of the overall gas-oil field of operations.

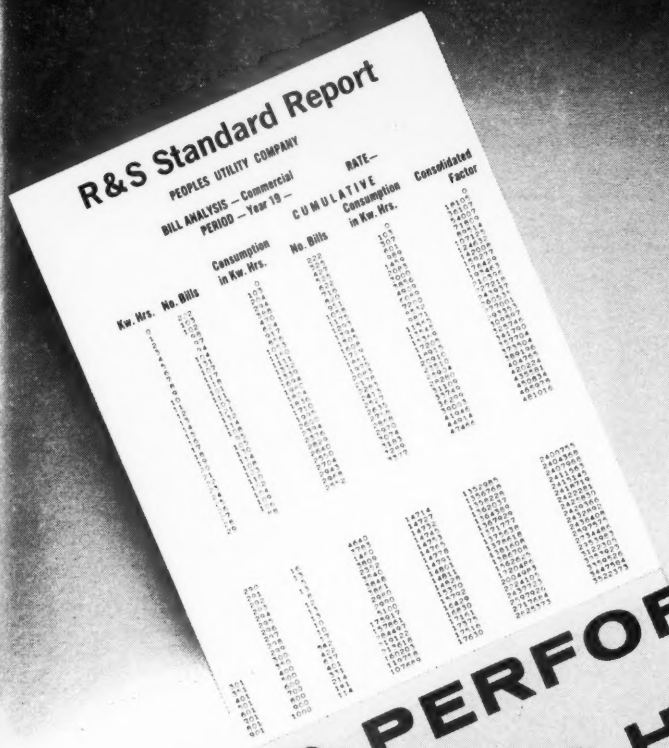
WHAT WAS OUR IMAGE ON WEDNESDAY?

Corporate image is one of those coined terms which means the public's idea of any given organization. Sometimes it is a true reflection but often it is distorted by foggy notions about the anatomy and the nature of different corporations. Harvey G. Booth, vice president of the Southern Bell Telephone and Telegraph Company, describes here the various components which go into the corporate image in the public eye as of a particular time. Balance sheets, stocks, real estate, plant, and most of all a large group of people from all walks of life contribute to the final reflection. It may be an ever-changing picture in some details, but the total impact is a matter of constant review to insure the reception of a reasonable facsimile of what the corporation really stands for and is trying to accomplish.

NEVER SAY "LOBBY"

Probably the most absurd paradox on the Potomac is the fact that the nation's capital is always under various kinds of pressure but never admits it. The very expression "lobby" is a dirty word and not used in polite circles. In impolite circles it might be used to designate a rival organization or other forms of opposition. It is more polite to speak of one's own interests as "loyalties" or "causes" or similarly more sympathetic designation. James H. Collins, who has been roaming around Washington with no inhibitions about pressures from any source, gives us an entertaining piece on the possible public relations value of utility planning for communities, regardless of what it is called in other quarters.

Also . . . ***Special financial news, digests, and interpretations of court and commission decisions, general news happenings, reviews, Washington gossip, and other features of interest to public utility regulators, companies, executives, financial experts, employees, investors, and others.***



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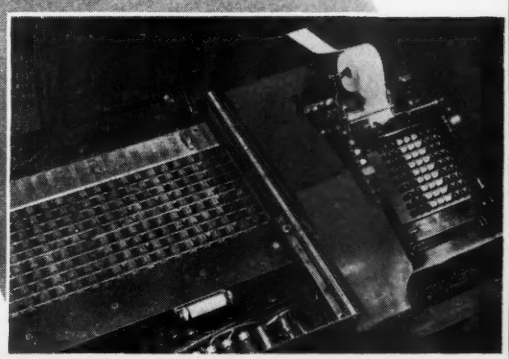

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Remarkable Remarks

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THOMAS NIXON CARVER
Columnist.

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EDITORIAL STATEMENT
The Wall Street Journal.

". . . from our observation of bureaucracy in Potomacland, there isn't an agency that wouldn't be more efficient as a result of at least a 20 per cent reduction in officeholders. . . . if the government really wants to reduce the bureaucratic ranks, all it has to do is demolish some more useless and costly federal programs."

ROY E. LARSEN
President, Time, Inc.

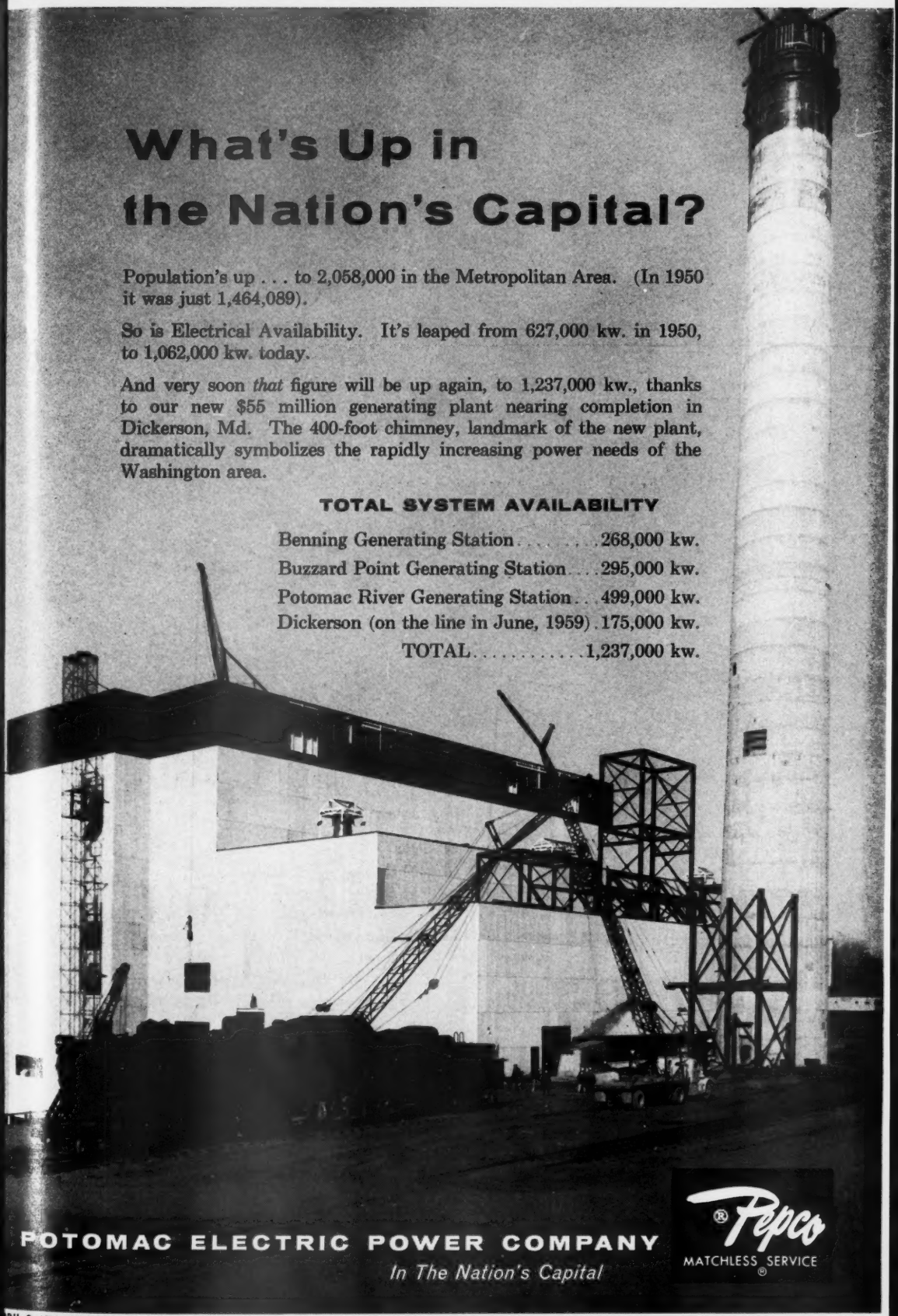
"[The public relations profession is] . . . the activating force in releasing for the public good the tremendous resources of man power and of wealth represented by the American corporation. [It is] the great awakener of the corporate conscience, the great exponent of the idea that corporations should be aware of themselves, just as their publics are aware of them."

ELMER L. LINDSETH
President, The Cleveland Electric Illuminating Company.

"Competent economists say a free society is in trouble when 20 to 25 per cent of its wealth goes to government in taxes. Today, our various levels of government—local, state, and federal—take more than 30 per cent of the wealth we create. What does this mean in plain language? It means that we—you and I and our fellow Americans—have abdicated to government the responsibility for controlling almost one-third of this country's total income. If we think we can throw away that much responsibility without losing some of our freedom, we are sadly deluding ourselves."

WALKER L. CISLER
President, Detroit Edison Company.

"There is a strong effort to have the federal government monopolize atomic power generation. Critics of private power atomic energy projects claim we are not progressing fast enough and want us to outrun the world in the atomic kilowatt race. There is no need for this. . . . It's wiser to develop broad concepts and technical mastery than plunge into the nuclear energy field with a nearsighted perspective. The energy shortages in Europe are not as severe as anticipated. Coal stocks in England and West Germany are piling up in large amounts. To top this are the recent discoveries of tremendous oil and gas deposits in Algeria and under the Sahara sands. . . . Russia plans to use its large fossil fuel reserves before getting into an all-out program of nuclear plant construction. Atomic power remains a problem of money and man power for them, too. . . . Our program of atomic power development in the U.S.A. should depend on the need—not political expediency."



What's Up in the Nation's Capital?

Population's up . . . to 2,058,000 in the Metropolitan Area. (In 1950 it was just 1,464,089).

So is Electrical Availability. It's leaped from 627,000 kw. in 1950, to 1,062,000 kw. today.

And very soon *that* figure will be up again, to 1,237,000 kw., thanks to our new $55 million generating plant nearing completion in Dickerson, Md. The 400-foot chimney, landmark of the new plant, dramatically symbolizes the rapidly increasing power needs of the Washington area.

TOTAL SYSTEM AVAILABILITY

Benning Generating Station	268,000 kw.
Buzzard Point Generating Station	295,000 kw.
Potomac River Generating Station	499,000 kw.
Dickerson (on the line in June, 1959)	175,000 kw.
TOTAL	1,237,000 kw.

POTOMAC ELECTRIC POWER COMPANY

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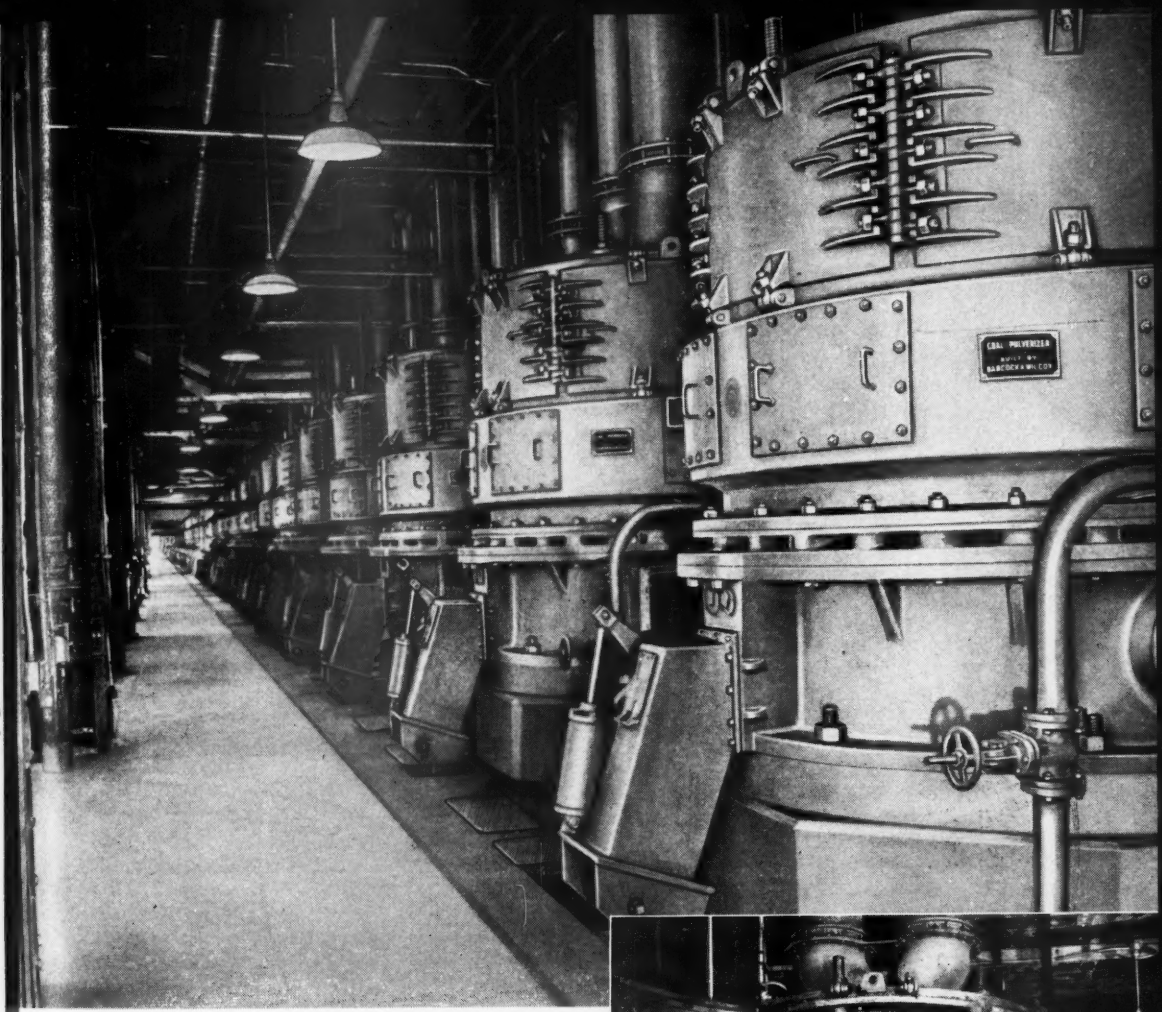

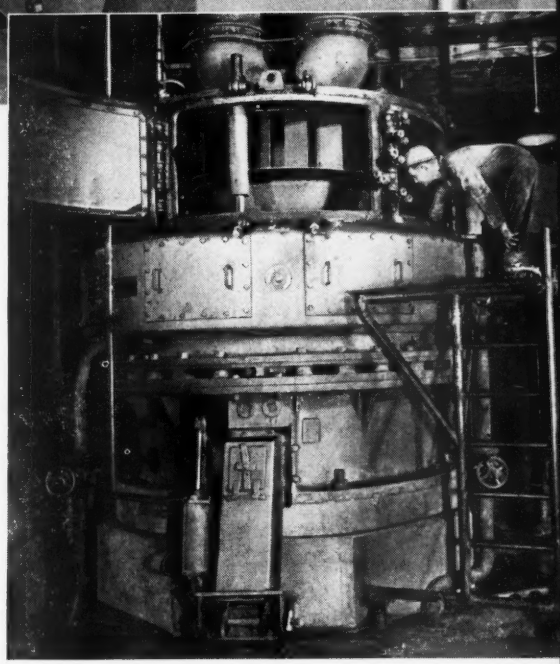

(Above) Part of the 42 B&W Pulverizers serving six B&W Open-Pass Boilers. (Right) Maintenance is simple: doors open wide, classifier and spring assemblies are readily accessible for removal. Grinding components are lifted without special rigging.

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ND FOR DATA. For full information about the &W Pulverizer and Pulverized-Fuel Firing Systems, te: The Babcock & Wilcox Company, Boiler ision, Barberton, Ohio.

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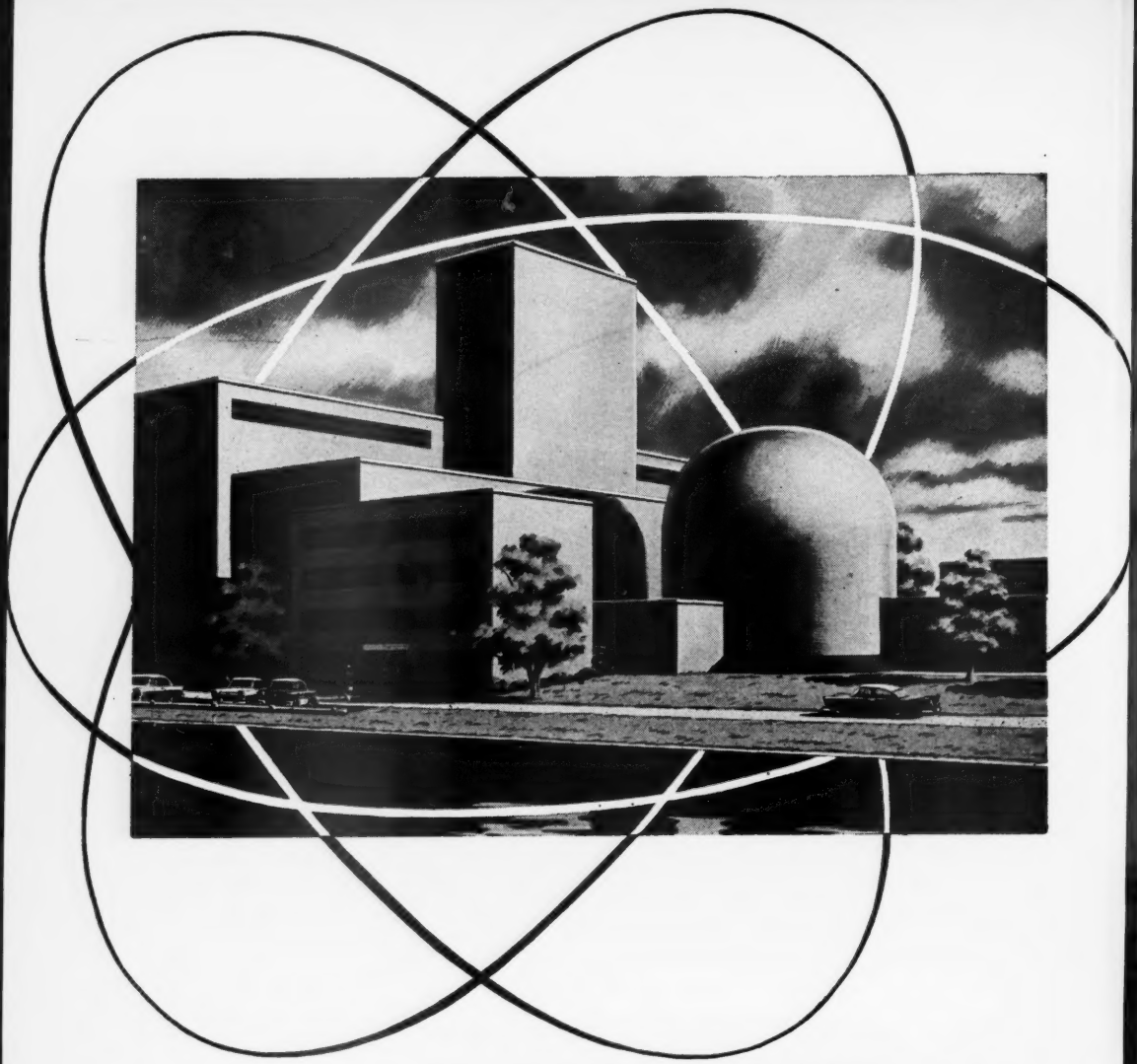
BOILER DIVISION



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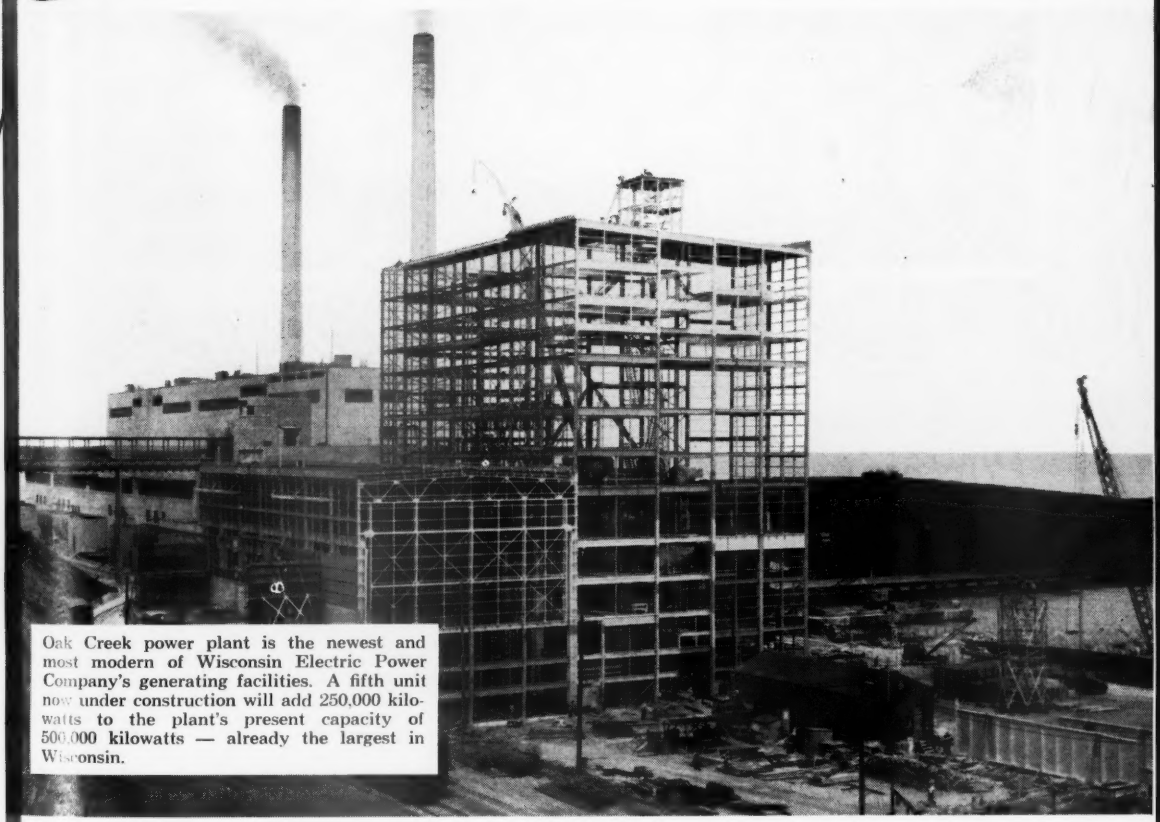


Oak Creek power plant is the newest and most modern of Wisconsin Electric Power Company's generating facilities. A fifth unit now under construction will add 250,000 kilowatts to the plant's present capacity of 500,000 kilowatts — already the largest in Wisconsin.

progress makes power mandatory . . . power makes progress possible

Electric power and progress go hand in hand. Progress makes power mandatory . . . power makes progress possible.

The Wisconsin Electric Power Company system serves an estimated population of 1,710,000 in 386 communities of Wisconsin and the upper peninsula of Michigan. Included is Milwaukee, America's 13th largest city, whose metropolitan area ranks eighth in the nation in industrial output. Milwaukee is investing millions to improve its fine harbor facilities and to prepare for the day when world traffic begins to use the new St. Lawrence Seaway.

Extending far out from Milwaukee into our service area are transmission lines serving factories and business establishments — complete communities with many all-electric homes — and many modern electrified farms. Supporting growth in all these areas is our expansion program which recognizes that progress and power must go together.

WISCONSIN ELECTRIC POWER COMPANY SYSTEM

Portrait of a family with a future!

Fact is, there's a bright future for two Michigan families. . . . The Donald R. Kalso family recently joined the Detroit Edison family of stockholders as its 100,000th member. For the Kalsos, it is an important venture into stock ownership. For Detroit Edison, it is evidence of the continued strong support from its owners.

Before the Kalsos made their decision, they took a careful look at their future investment. They tell us they liked what they saw, for it represented to them a sound company with an almost unlimited growth potential. Detroit Edison's electrical system now has a capacity of nearly 3.5 million kilowatts and serves a million and a quarter customers. Plant investment is over $1.1 billion.

The dividend record looked good, too. Detroit Edison recently paid its 200th consecutive quarterly dividend . . . 50 years of financial stability.

This is only part of the progress story. For the entire family of stockholders and the company, each new chapter brings greater opportunity to grow and prosper along with the area Detroit Edison serves in Southeastern Michigan.

THE DETROIT EDISON COMPANY

Serving 4,300,000 people in Southeastern Michigan

what's cooking?

When utilities need financing, one of the first places they turn is to the Continental Illinois. Our Utilities Division is staffed with specialists who have worked with utilities from coast to coast. Our central location and vast resources are added reasons why you should call STate 2-9000.

CONTINENTAL ILLINOIS NATIONAL BANK
and Trust Company of Chicago

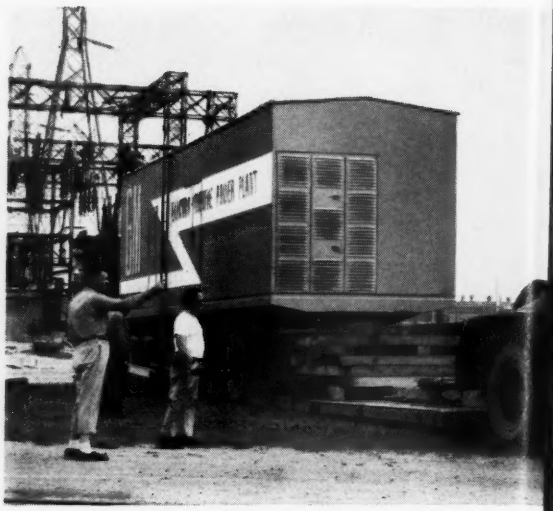
Resources more than 2½ Billion Dollars

Member F. D. I. C.

6000 KW PEAKING PLAN

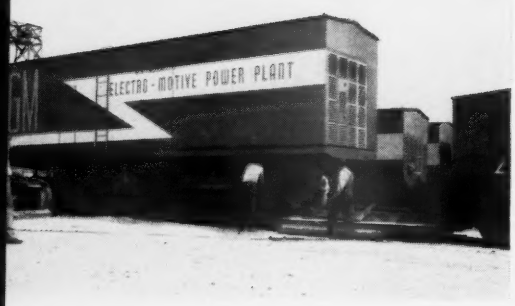
FIRST DAY

First of three self-housed generators is placed on flat-bed trailer or rail car at Electro-Motive Plant. Unit is then hauled to installation site.



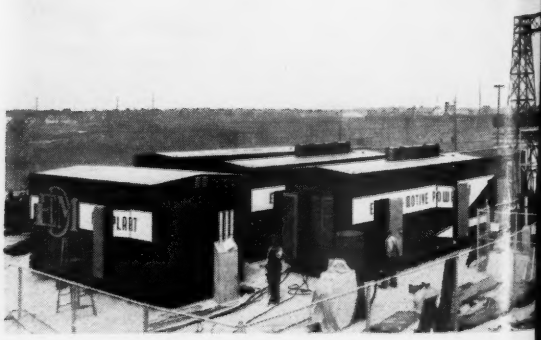
THIRD DAY

First generator arrives at site. Previously, underground fuel tanks, lines, cables were installed, ground leveled and stone fill added. Ties were then placed on fill to form foundations for plant components.



SIXTH DAY

Third generator arrives at site. Controls component and second generator were installed day before. "Package" design of all components permits easy handling with winch and jacks.



EIGHTH DAY

Adjustment and inspection. Performance tests on individual components begin. On ninth day, plant checked out under actual load conditions, integrated into system operations. Safety fence completed.

ON THE LINE IN TEN DAYS

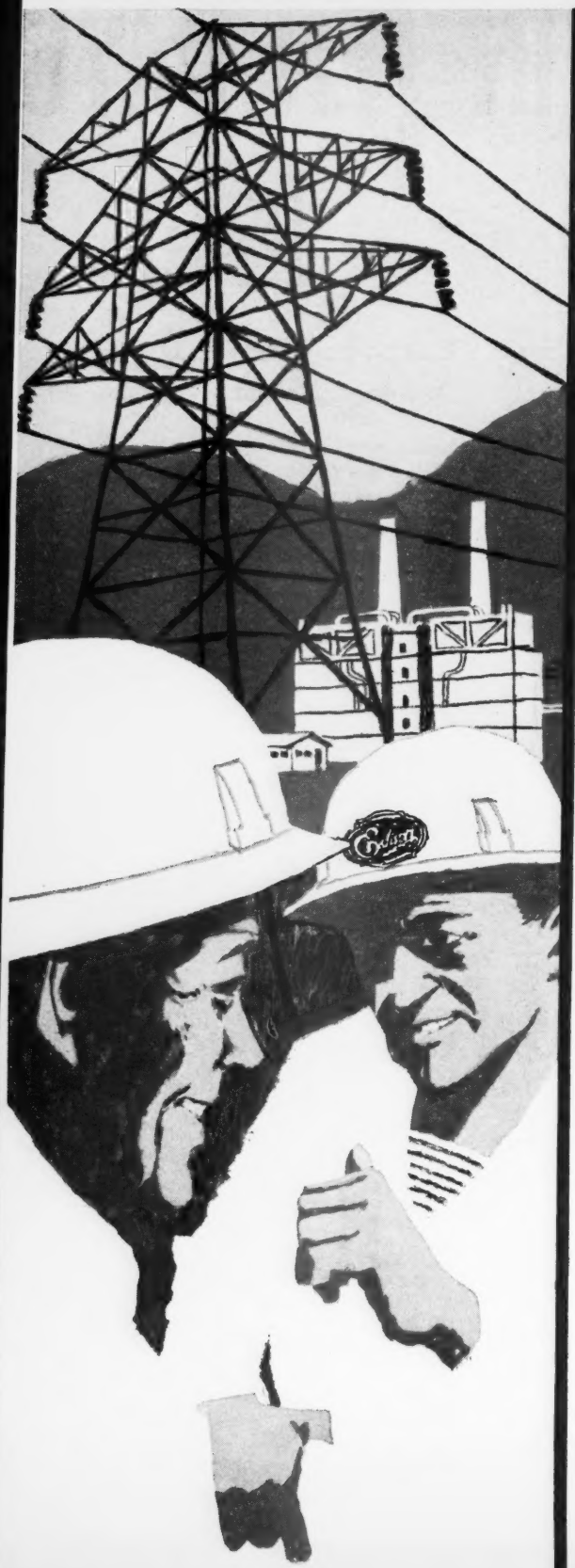
TENTH DAY

6000 KW of new peaking and reserve power is put on the line. Landscaping was added later to complete site. Plant operates completely unattended, comes up to full load from dead start in less than ninety seconds. Entire plant could be moved to new site in same ten-day period, if changing load characteristics require such a move. For complete details, contact your Electro-Motive representative.

ELECTRO-MOTIVE DIVISION
GENERAL MOTORS · La Grange, Ill.

Sales-engineering offices:
Chicago, New York, St. Louis, San Francisco

In Canada:
General Motors Diesel Limited, London, Ontario



THE FIELDS ARE FEW AND FAR BETWEEN...

Try to find that field you drove across last year in Southern California. It's gone. And in its place now stands a mammoth housing tract... or a factory... or a major new shopping center. It's happening everywhere... in Santa Ana, Long Beach, Ontario, San Bernardino, Oxnard... in all the 10 counties served by Southern California Edison.

And you can count on this: Edison will continue building ahead to provide the electric power essential to the burgeoning development of the homes, industries and businesses of this tremendous growth empire.

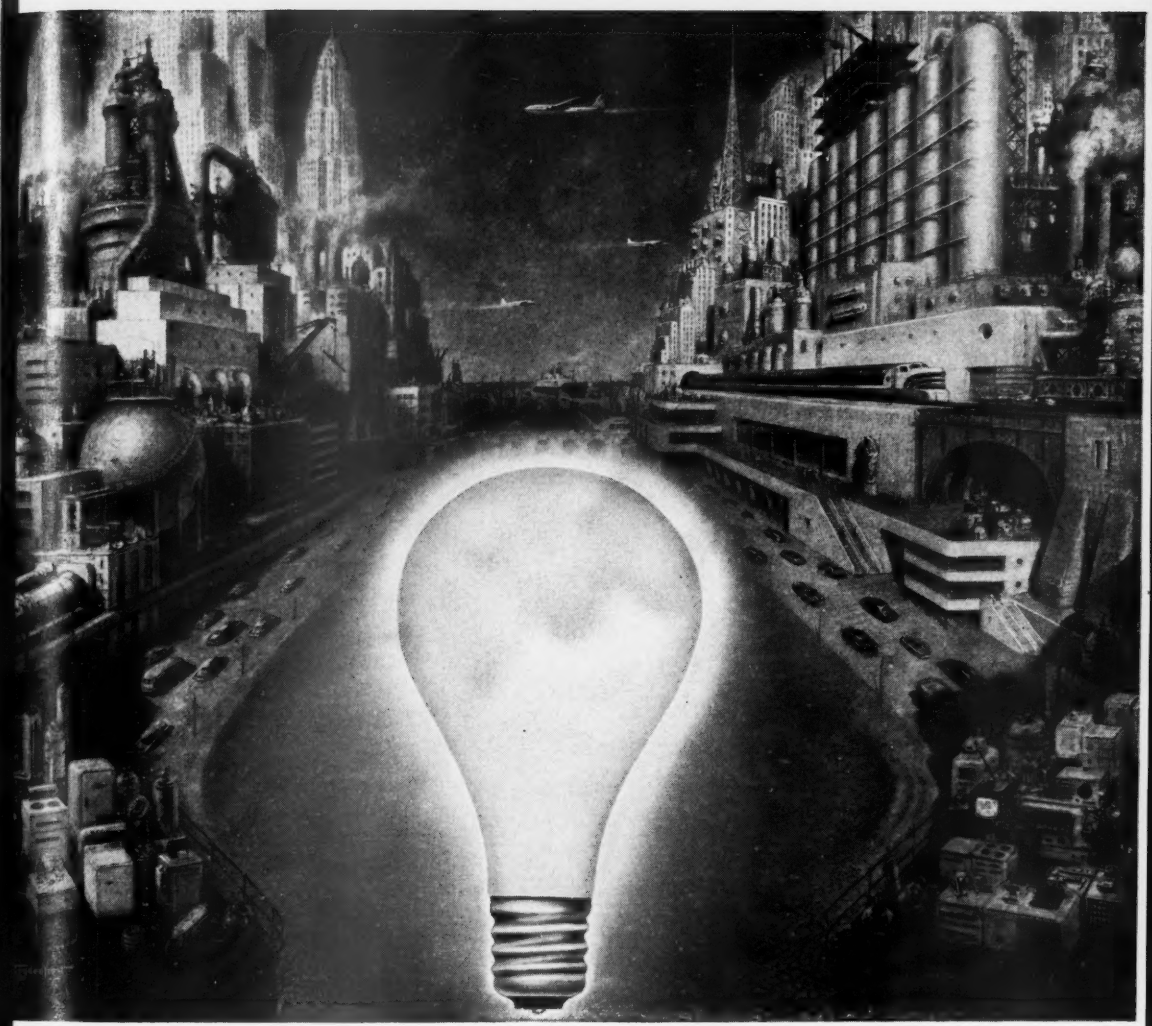
•

For a copy of Southern California Edison's 1958 Annual Report write:

T. J. Gamble, Secretary,
P.O. Box 351,
Los Angeles 53, California.

SOUTHERN CALIFORNIA EDISON COMPANY

Edison Building • 601 West Fifth Street
Los Angeles 53, California



LIFE FORCE
for Industrial Growth

Power, fuel, energy—the stock-in-trade of privately owned utilities—gain increasing importance in the nation's economic development.

This past year has seen the opening and operation of the first nuclear power plants—initial steps toward a new era of progress.

Already experienced in working with leading companies, this bank values its opportunities for association with the initiative and achievements of the utility industry.

A TOWER OF STRENGTH

BANKERS TRUST COMPANY

16 Wall Street, New York 15, N. Y.

Member Federal Deposit Insurance Corporation

atomic progress

THROUGH

58 YEARS

pioneer

SERVICE

&

ENGINEERING CO.

231 S. La Salle Street,
Chicago, Illinois

In 1952 Pioneer joined with other groups, all reporting to the Atomic Energy Commission, in constant study of atomic energy application. Today Pioneer is qualified as a consultant to industry in the application of atomic reactor systems to the generation of electric power. Presently, Pioneer is acting as architect-engineer and supervisor of construction of the 66,000 kw commercial atomic power plant shown here. Allis-Chalmers Mfg. Co. is the prime contractor. Scheduled for 1962 completion, the plant, for the Northern States Power Co., will be known as the "Pathfinder".

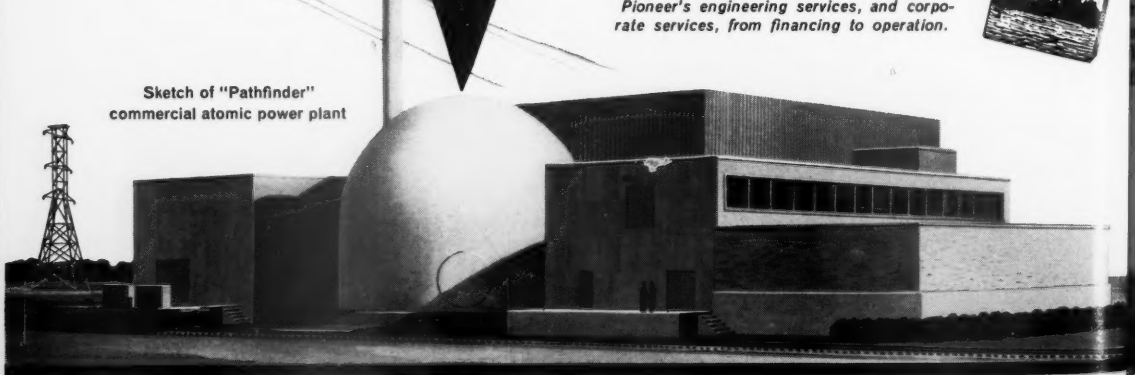
Organized as Central Utilities Atomic Power Associates, these utilities will share in the research and development costs: Northern States Power Co., Central Electric and Gas Co., Interstate Power Co., Iowa Power and Light Co., Iowa Southern Utilities Co., Madison Gas and Electric Co., Mississippi Valley Public Service Co., Northwestern Public Service Co., Ottertail Power Co., St. Joseph Light and Power Co., Wisconsin Public Service Corp.

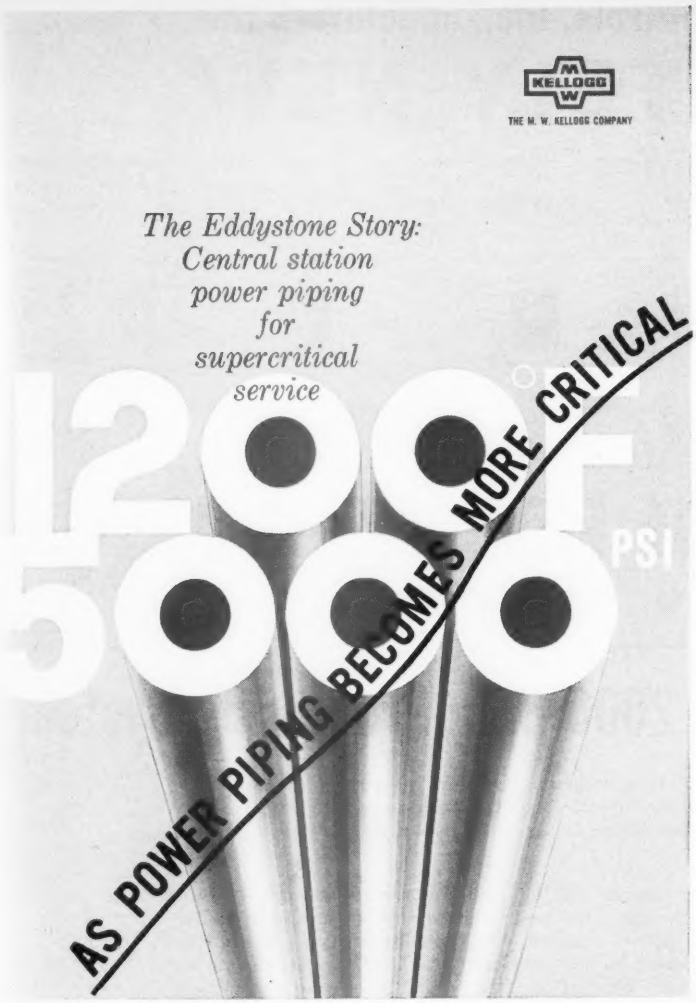
PIONEER SERVICE & ENGINEERING CO., 231 South La Salle Street, Chicago, Illinois

NEW!

Write for 40-page booklet, "Pioneering New Horizons in Power". Describes, illustrates Pioneer's engineering services, and corporate services, from financing to operation.

Sketch of "Pathfinder" commercial atomic power plant





NATIONAL WELDED PRODUCTS MONTH · APRIL 1958 ·

M. W. Kellogg's Complete Power Piping Service Keeps Pace

The services performed on one major assignment—the supercritical power piping for Eddystone Station, Unit No. —are evidence of The M. W. Kellogg Company's capability to solve the many critical problems encountered with power piping in the modern steam-electric plant.

Kellogg's services for Philadelphia Electric Company during the course of this project have included metallurgical research, flexibility analysis, material specifications, K-welding® and testing during fabrication in Kellogg's Jersey City shop and during field erection.

Some idea of the magnitude and complexity of Kellogg's responsibilities at Eddystone, and how problems were solved, may be obtained from the new 12-page Kellogg booklet, "The Eddystone Story", shown above. Copies will be sent promptly on requests from consulting engineers, engineers of power generating companies, and manufacturers of boilers, turbines, and allied equipment.

- Metallurgical Research
- Flexibility Analysis
- Material Specifications
- Shop Fabrication
- Field Erection

Kellogg welcomes the opportunity to discuss any or all of its complete power piping facilities with representatives of the industry.

Fabricated Products Sales Division

THE M. W. KELLOGG COMPANY, 711 THIRD AVENUE, NEW YORK 17, N. Y.

A SUBSIDIARY OF PULLMAN INCORPORATED

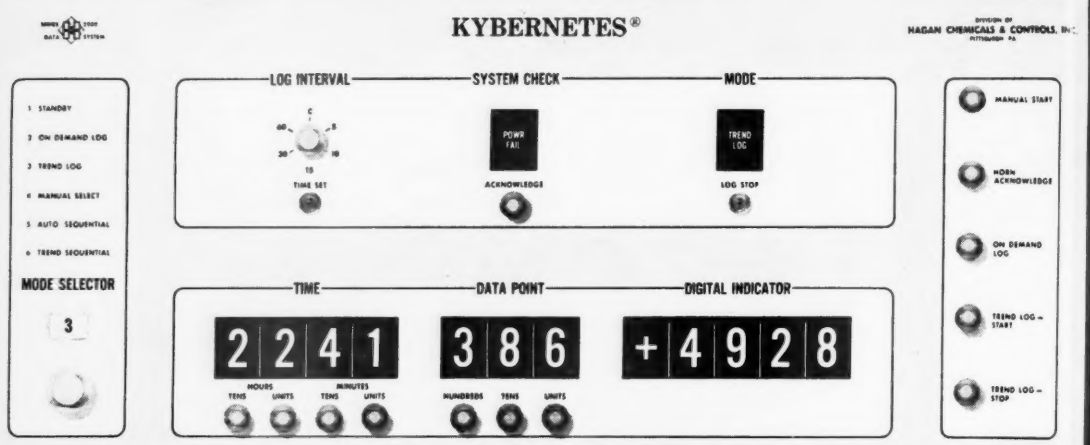
The Canadian Kellogg Co., Ltd., Toronto • Kellogg International Corp., London • Kellogg Pan American Corp., New York
Societe Kellogg, Paris • Companhia Kellogg Brasileira, Rio de Janeiro • Compania Kellogg de Venezuela, Caracas

POWER PIPING—THE VITAL LINK

®Registered trademark of The M. W. Kellogg Company

Hagan Chemicals & Controls, Inc., announces the

COMPLETELY NEW



Kybernetes Series 2000 Data Processing System

The new Kybernetes Series 2000 Data Processing System, utilizing solid state components, adds many data handling advances to the outstanding features of the original equipment. Here are some of the features the new Kybernetes system has to offer:

NEW FLEXIBILITY—Basic unit is a simple logging unit for recording process data on a log sheet or other output device. This basic system can be expanded easily, both in terms of the number of points scanned, and the complexity of the operations performed by the unit. For example these can be added as need develops: *Scanning for off-normal conditions—Printed or visual trend of selected variables—Computing and integrating—Automatic programming and optimum setting of control.*

NOTE—*Any* or *all* of these functions may be performed without interrupting any of the other functions. Off-normal scanning *always* proceeds uninterrupted.

OPTIMUM RELIABILITY—Fewer components, simplified design logic and solid state components add to the inherent reliability of the system. All parts have been selected for long life and easy maintenance.

MODULAR CONSTRUCTION simplifies extension of system. Each new function can be added by simply plugging-in appropriate module.

SELF-CHECKING CIRCUITS immediately signal malfunction in any area and spot the area with a warning light.

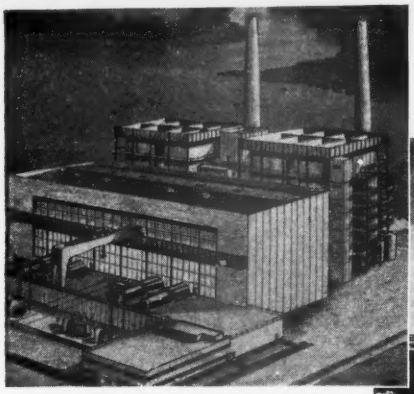
ACCURACY of 0.1% on all inputs, including non-linear types is achieved by eliminating marginal techniques and components, using the highest quality components and by the use of simplified design logic.

Flexible, accurate and reliable, the new Kybernetes Series 2000 Data Processing System offers many previously unattainable advantages. Designed for maximum usefulness with minimum investment, *the new Kybernetes system permits the addition of functions as needed, including complete computer control.* A new brochure describes these advantages in detail. Write today for your copy; ask for Bulletin MSP-161.

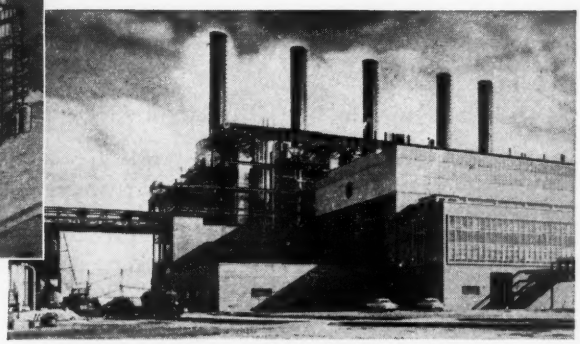
HAGAN CHEMICALS & CONTROLS, INC.

DIVISIONS: CALGON COMPANY, HALL LABORATORIES

HAGAN BUILDING, PITTSBURGH 30, PA.
In Canada: Hagan Corporation (Canada) Limited, Toronto
European Division: Via Flumendosa No. 13, Milano, Italy

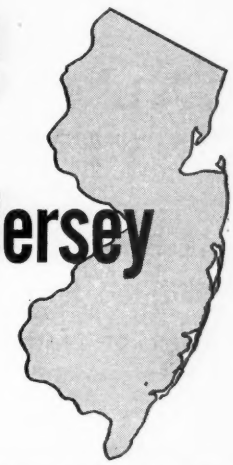


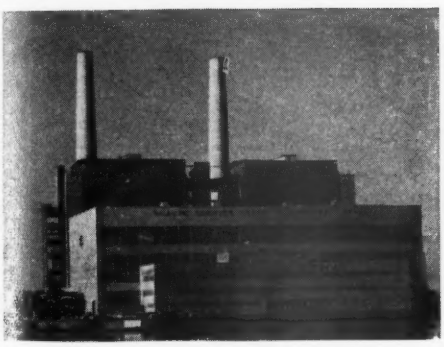
MERCER GENERATING STATION, shown here in an architect's drawing, will produce 640,000 kilowatts when completed in 1961.



LINDEN GENERATING STATION, which also produces steam for Esso Standard Oil Company, has a capacity of 450,000 kilowatts of electric power.

More and more POWER for New Jersey





BERGEN GENERATING STATION will have a rated capacity of 580,000 kilowatts.

The future growth of New Jersey is clearly reflected in the actual planning and construction of new electric generating facilities in the territory which we serve. These three generating stations will cost Public Service a total of $340,000,000 when completed.

By 1962 the installed electric generating capacity of Public Service will exceed four million kilowatts.

All of these facts reflect the growth of New Jersey . . . and Public Service is growing along with this great state. The years ahead hold great promise. We are planning ahead to fulfill that promise.

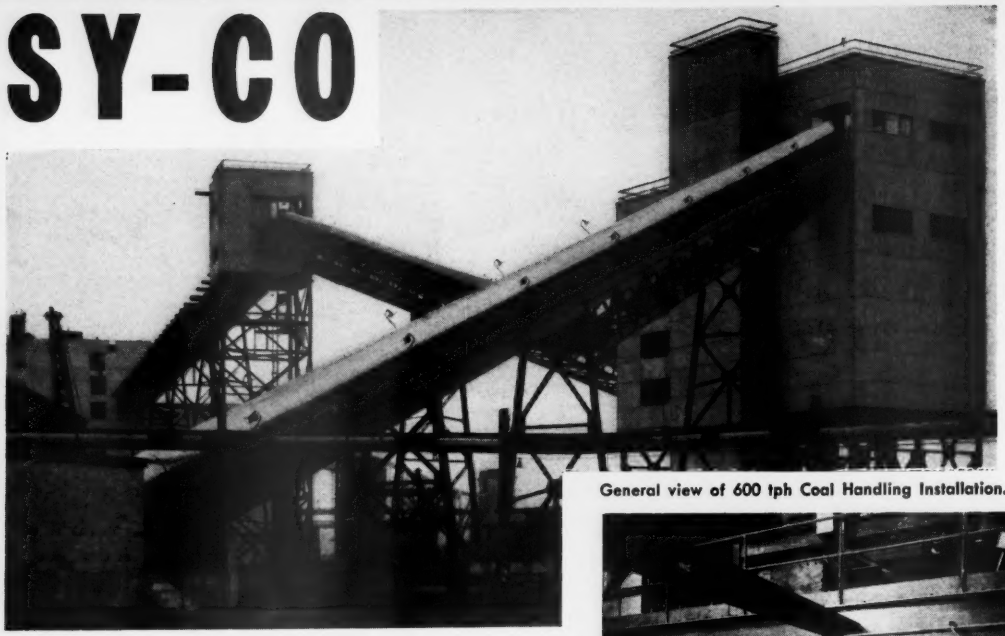
PUBLIC SERVICE ELECTRIC AND GAS COMPANY

Public Servant of a Great State

Newark 1, New Jersey

A-100-59

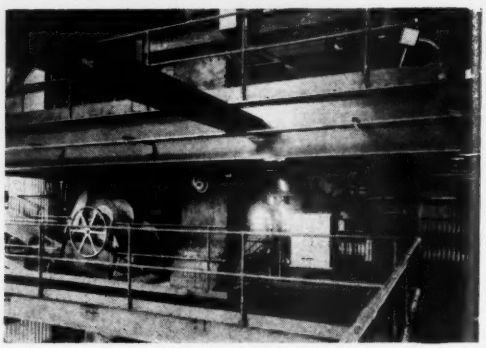
SY-CO



General view of 600 tph Coal Handling Installation.

COAL HANDLING CONVEYORS - - -

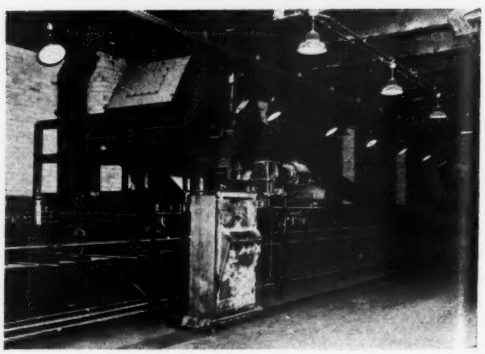
Astoria Plant,
Consolidated Edison
Company of New York, Inc.



Chute arrangement at sampler and automatic weighing station, also showing tramp iron chutes at the magnetic pulley.

Low cost coal handling is planned with these three factors in mind:

- Efficiency
- Economy of installation and operation
- Low maintenance costs



Motorized tripper with bunker seal.

SY-CO Corporation treats these factors in all bulk handling problems with the skill and knowledge that comes only with experience.

Write for descriptive literature

Sy-Co CORP.

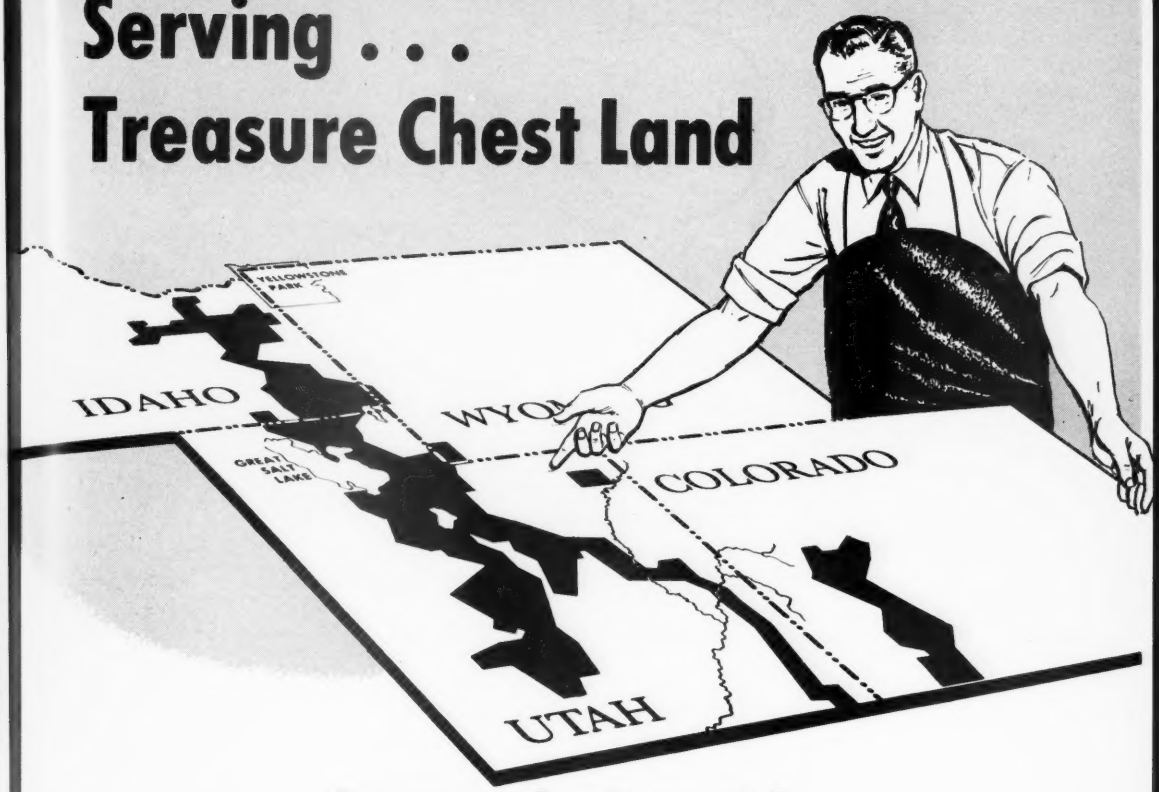
A reputation for Dependability is our most valued possession

SY-CO CORPORATION

594 Industrial Avenue **COlfax 1-1414** **Paramus, N. J.**

CONVEYING SYSTEMS FOR EVERY PURPOS

Serving . . . Treasure Chest Land



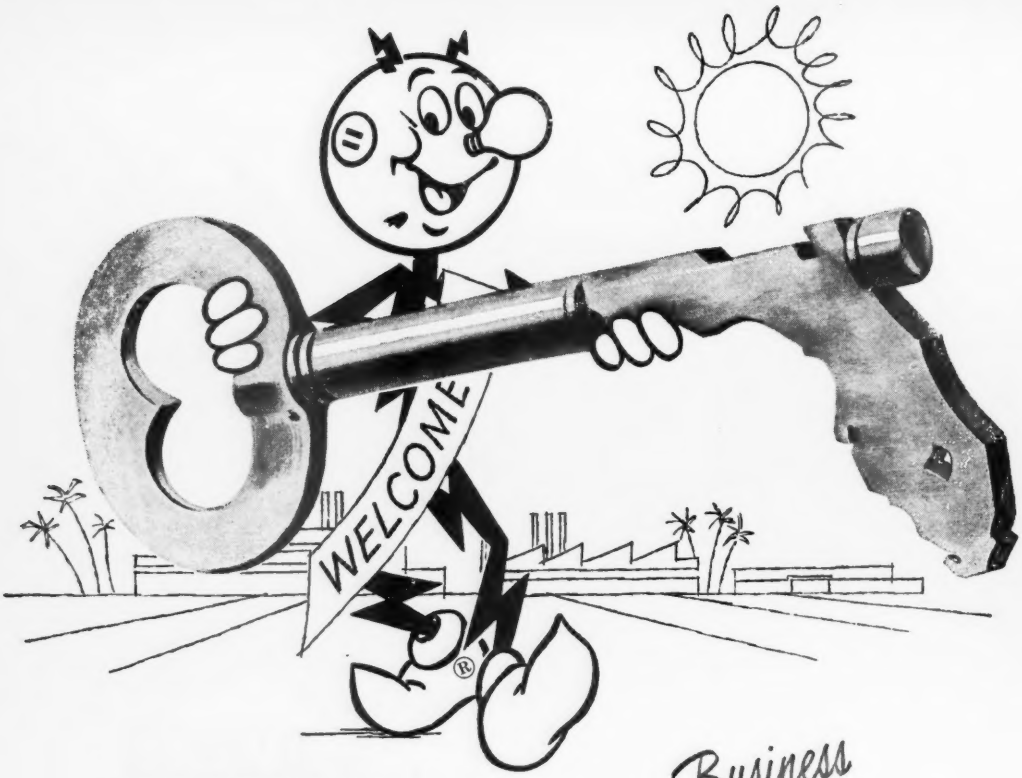
— the area that's so rich in raw materials and chemicals

Rich stores of practically every raw material needed by modern industry abound in the vast Utah, Idaho, Colorado and Wyoming area served by Utah Power & Light Co. and subsidiaries: The Western Colorado Power Co. and Telluride Power Company.

WRITE FOR BROCHURE: "A Treasure Chest in the Growing West" containing detailed information regarding industrial opportunities Address: W. A. Huckins, Dept. 19, Utah Power & Light Co., Salt Lake City, Utah

UTAH POWER & LIGHT CO.

A Growing Company in a Growing West



FLORIDA: KEY TO BETTER Business CLIMATE!

Today, the nation's playground is *pay*ground for a growing parade of new businesses. Climate is the clue—a living climate that makes for happy people and a business climate that makes for healthy profits.

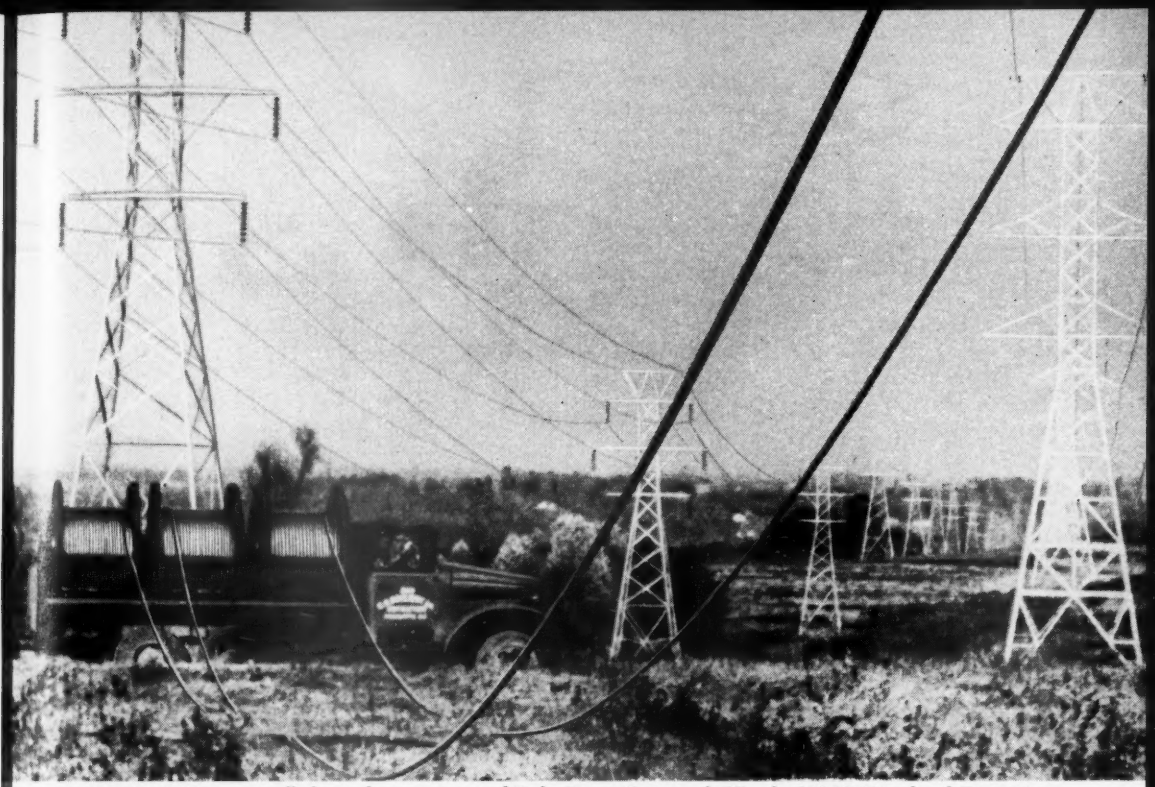
Florida is growing faster than any other large State in the country. It offers bulging *markets*, a rich reservoir of *manpower*, friendly *governments*, lower *costs*, superb *transportation* facilities . . . and dependable *electric power* guaranteed by the greatest expansion of generating capacity in the history of FP&L.

In every sense, a Florida future makes sense . . . for *your* business, too!

FLORIDA POWER & LIGHT COMPANY

MIAMI, FLORIDA

This advertisement is part of our continuing program . . . **"Helping Build Florida"**



ANACONDA ACSR was installed over large segment of Duke Power Company's 75-mile, 230 KV Riverbend-Tiger Line.

ACSR? Put Anaconda's 50 years of transmission cable experience to work for you

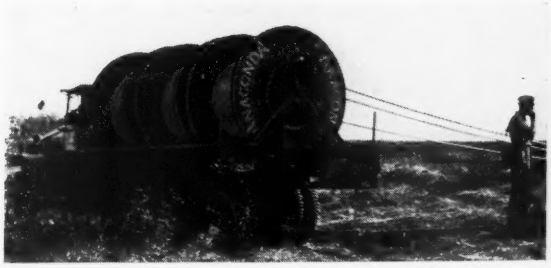
From the very finest engineered product . . . to superior workmanship . . . to on-the-job assistance . . . there is no one better prepared to serve you today with ACSR than Anaconda.

Producing top quality transmission cable requires more than a ready supply of metal—copper or aluminum. The most vital ingredient of good cable is the manufacturer's *cable experience.*

The choice of metals may change, depending on economic or other considerations. But cable requirements and the skills and knowledge involved in making dependable transmission lines do not. Whether copper or aluminum . . . it will pay you to call on the Man from Anaconda.

Backed by the broadest line of wire and cable in the industry, in both copper and aluminum, he is best qualified to help you arrive at the most practical and economical answer to your cable needs.

Multi-mill manufacturing facilities – strategically located across the country – assure speedy service.

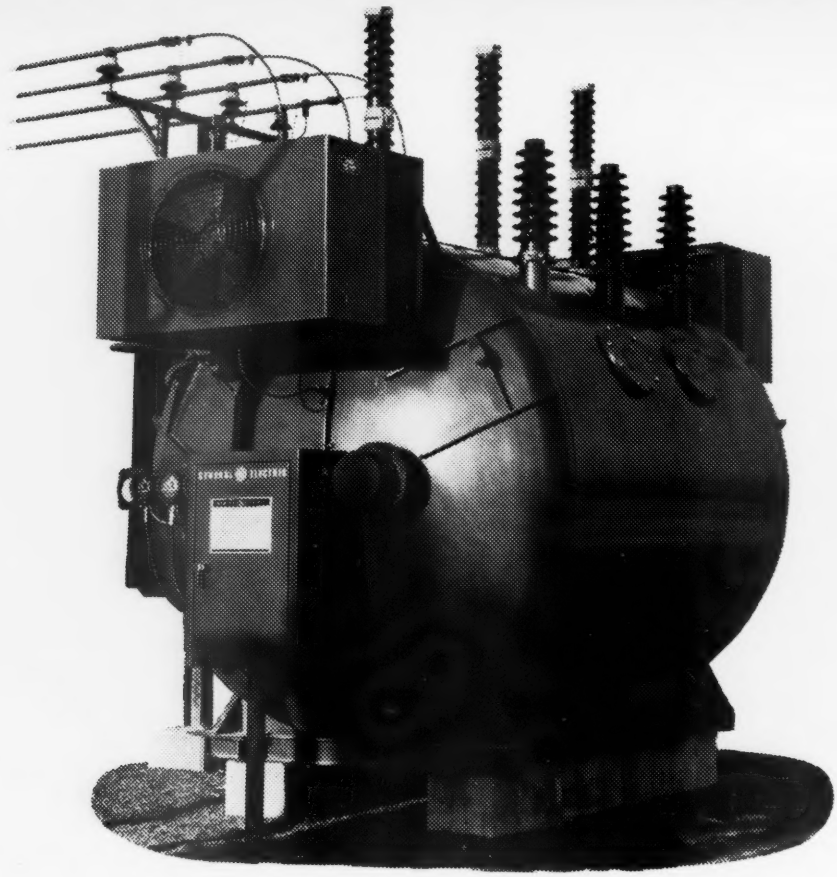


UNIQUE THREE-REEL TRUCK was used to install cable—795 Mcm, 26/7 ACSR from Anaconda. Three reels at once sped work.

Anaconda Wire & Cable Company, 25 Broadway, New York 4, New York.

P.S. TECHNICAL ASSISTANCE. Anaconda field engineers have worked in advisory capacity on hundreds of complex jobs. They are ready to put their experience and knowledge to work on your problem. 57368PUF

Ask the Man from ANACONDA®
for ALUMINUM WIRE & CABLE



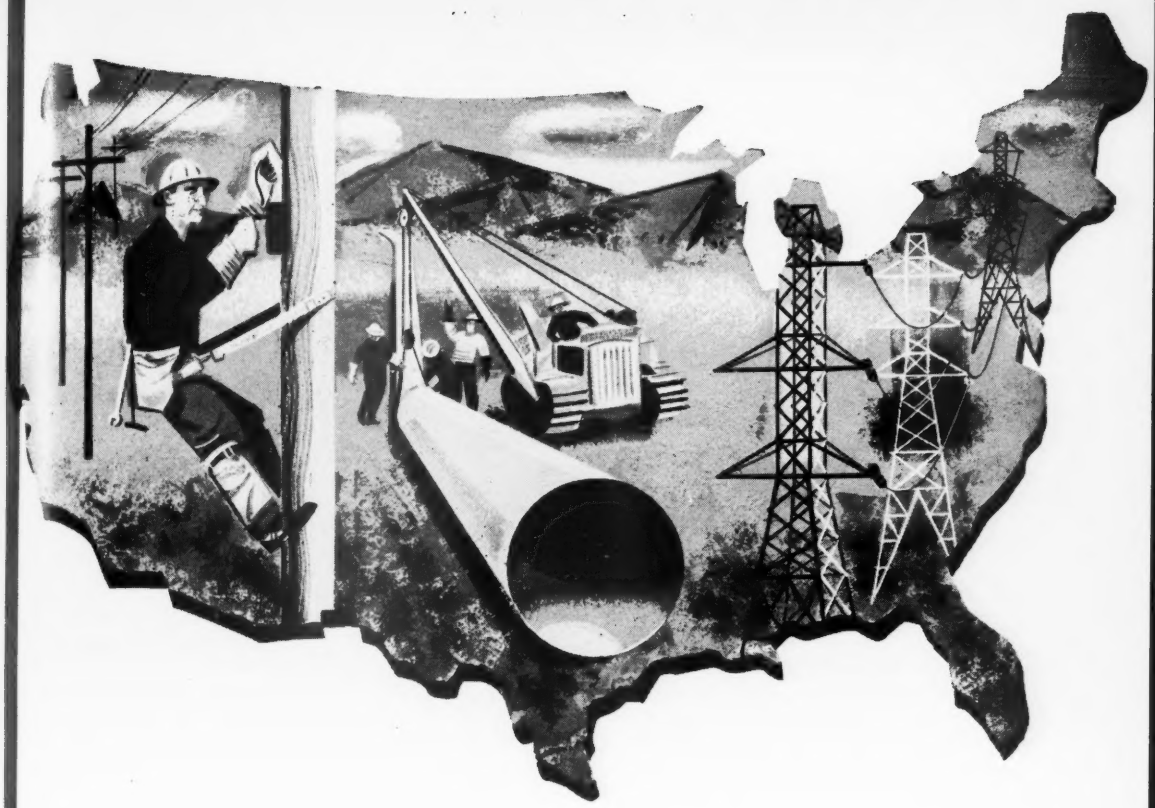
"... the most radical change in transformer design in fifty years!"

This revolutionary gas-filled transformer is presently the largest of its type. Developed by General Electric, it was recently installed in a PP&L substation where it is providing operating data toward development of even larger transformers of this economical type.

Adaptation of new techniques, equipment and thinking . . . in other words, PROGRESS . . . has always been a responsibility in the PP&L program. Under such a policy, PP&L was a pioneer in "outdoor" type power plant in the colder portions of the United States. A second is already in building. Similarly, PP&L is among the leaders in adapting electronic equipment in many phases of its business. And promotional effort has been broadened from appliance promotion to broad business development.

We believe that only through PROGRESS can we effectively meet our customers' increasing needs, attract and retain competent people and maintain investor confidence.

PENNSYLVANIA POWER & LIGHT COMPANY



Lifelines of the nation!

Playing a dynamic role in the economy of our nation, the investor-owned Utility Industry continues to expand its lifelines of service. Not only meeting the needs of today's consumers, but preparing also for an atomic age, Utilities are faced with enormous capital expansion requirements.

To assist in the many financial complexities accompanying this growth, Irving specialists are ready with new and sound approaches. Our Analytical Studies, Seminars, and Round Tables, may bring added vitality to your capital planning, financing, or cultivation of the financial community.

For more information, call Public Utilities Department at DIgby 4-3500
or write us at One Wall Street

IRVING TRUST COMPANY

One Wall Street, New York 15, N.Y.

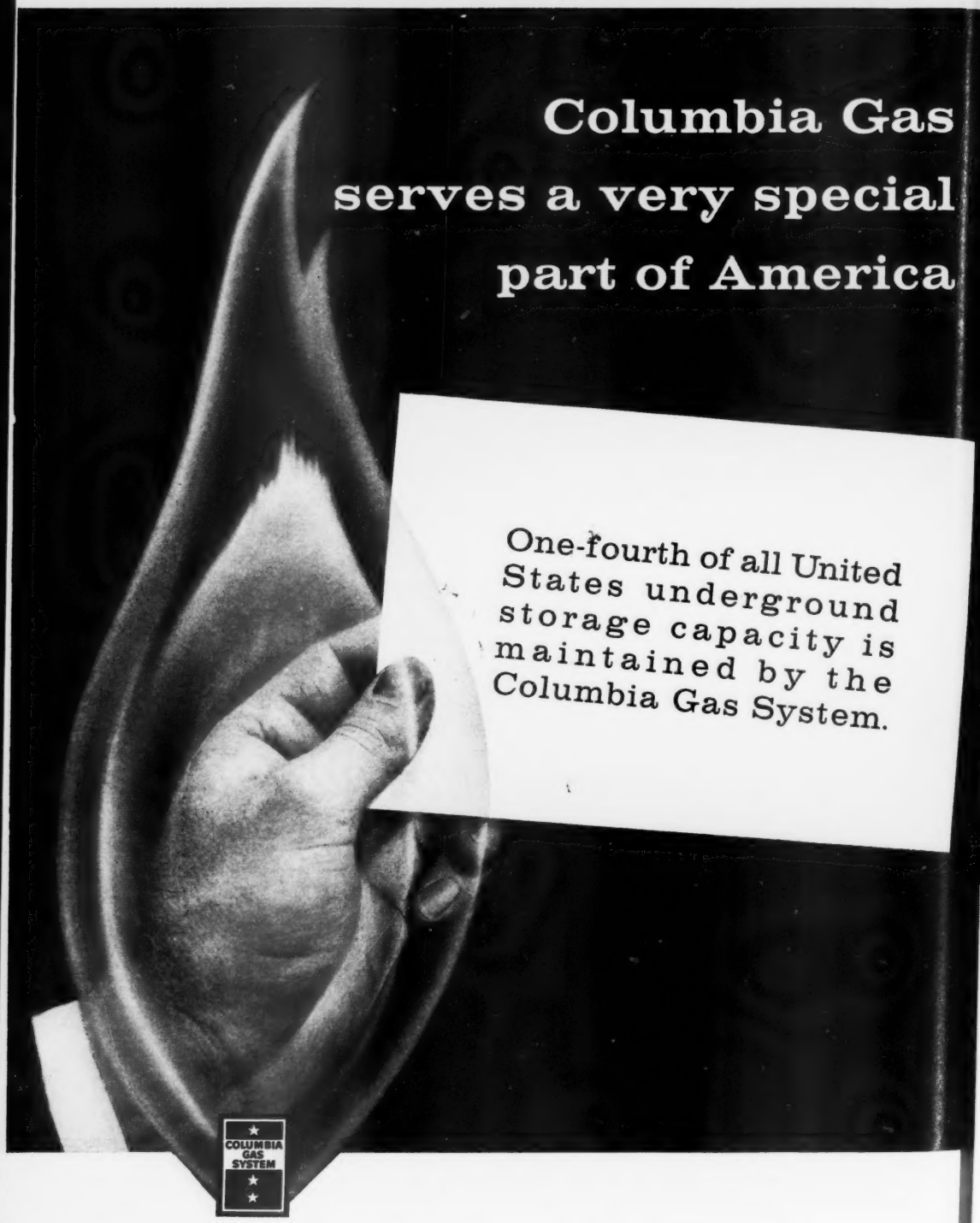
Capital Funds over $135,000,000 — *Total Assets over $1,600,000,000*

RICHARD H. WEST, *Chairman of the Board* — GEORGE A. MURPHY, *President*

Public Utilities Department—JOHN F. CHILDS, *Vice President in Charge*

MEMBER FEDERAL DEPOSIT INSURANCE CORPORATION

Columbia Gas serves a very special part of America


One-fourth of all United States underground storage capacity is maintained by the Columbia Gas System.
COLUMBIA GAS SYSTEM

Throughout its service territory—in Ohio, Pennsylvania, West Virginia, Kentucky, Virginia, Maryland and southern New York—natural gas continues to be the *preferred fuel* for home and industry.

THE COLUMBIA Gas SYSTEM, IN

COLUMBIA GAS SYSTEM SERVICE CORPO
COLUMBIA HYDROCARBON CORPOR
120 EAST 41st STREET, NEW YORK 17

CHARLESTON GROUP: UNITED FUEL GAS COMPANY, 1700 MacCO AVENUE, S.E., CHARLESTON, WEST VIRGINIA. **COLUMBUS GROUP:** OHIO FUEL GAS COMPANY, 99 NORTH FRONT ST., COLUMBUS 15, O **PITTSBURGH GROUP:** THE MANUFACTURERS LIGHT AND HEAT C PANY, 800 UNION TRUST BLDG., PITTSBURGH 19, PA.

LANSING POWER STATION INTERSTATE POWER COMPANY *58,000 kw—3 Units*

Power in the Midwest...

10,000 square miles of the richest farm land in the country are served with electric power by Interstate Power Company. Some 14,000 farms in northern Iowa, southern Minnesota, and a portion of northwestern Illinois account for a major share of the utility company's load. Interstate Power Company is helping to build the future of its territory. New additions to the company's system of modern generating plants will continue to supply economic power for further agricultural and industrial development of this growing tri-state region.

FULL COLOR BROCHURE outlining the scope of Sargent & Lundy services will be sent on request.

SARGENT & LUNDY
ENGINEERS

140 SOUTH DEARBORN STREET, CHICAGO 3, ILLINOIS

AN INFORMATIONAL PROGRAM FOR UTILITY EMPLOYEE

The P.U.R. Guide

► A new and different approach to the educational needs of utility employees — called THE P.U.R. GUIDE—is now widely in use throughout the industry. Somewhat descriptively, the GUIDE is referred to as "a journey of understanding." It takes the user through the economics of public utilities and through many other non-technical phases of utility operation. It was organized by and is issued under the general supervision of an experienced staff of specialists.

► THE P.U.R. GUIDE program is a systematically and consecutively arranged series of weekly lessons, in pamphlet form, offering a simplified, progressive, step-by-step story about the nature of the utility business, its important place in the American economy, the present conditions under which it is conducted, its day-to-day objectives and responsibilities, the existing problems with which it is confronted and other current subjects arising in connection with organization, financing, management, operation and regulation. This program adds guidance to experience in the development of the company "management team."

Features of THE P.U.R. GUIDE

- ► 50 issues of 8 pages (one each week)
- ► Certificate of satisfactory completion
- ► Glossary of words and terms and complete index
- ► Ring binder embossed with enrollee's name
- ► Leader's Manual for group discussion
- ► Occasional reprints from Public Utilities Fortnightly
- ► Enrollments on company order only

Comments about THE P.U.R. GUIDE

Our Company is currently involved in several training programs, and I feel qualified to evaluate the information that you are sending out. I think this type of **material is, without a doubt, the very best** that could be obtained for key utility employees.

Director of Personnel, Electric Company

We feel that even those who have been in the utility industry for many years **can learn much by just reading the material.**

District Manager, Electric Company

We all feet that this "information program for utility employees" is a program that is **needed in the public utility industry.**

Vice President, Gas Company

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Vice President and General Manager, Telephone Company

THE P.U.R. GUIDE program is the **best basic public utility information series** I have even encountered.

Vice President, Gas Company

Two things have particularly impressed me about THE P.U.R. GUIDE. First, is the **complete manner** in which your editors treat the various topics; second the **simplicity in writing.**

Employment Supervisor, Gas Company

There is a **definite need** for such a type program in our industry.

Training Assistant, Electric & Gas Company

Those in charge of employee education or training may obtain further information from:

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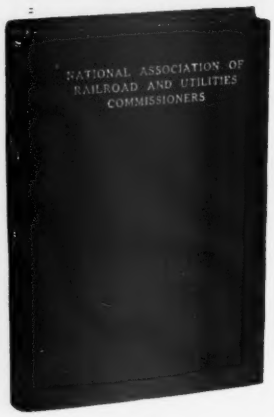

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NOTE: ***1958 Revised Uniform System of Accounts for Electric and Gas Utilities are in the process of being printed and will be available about May 1, 1959.***

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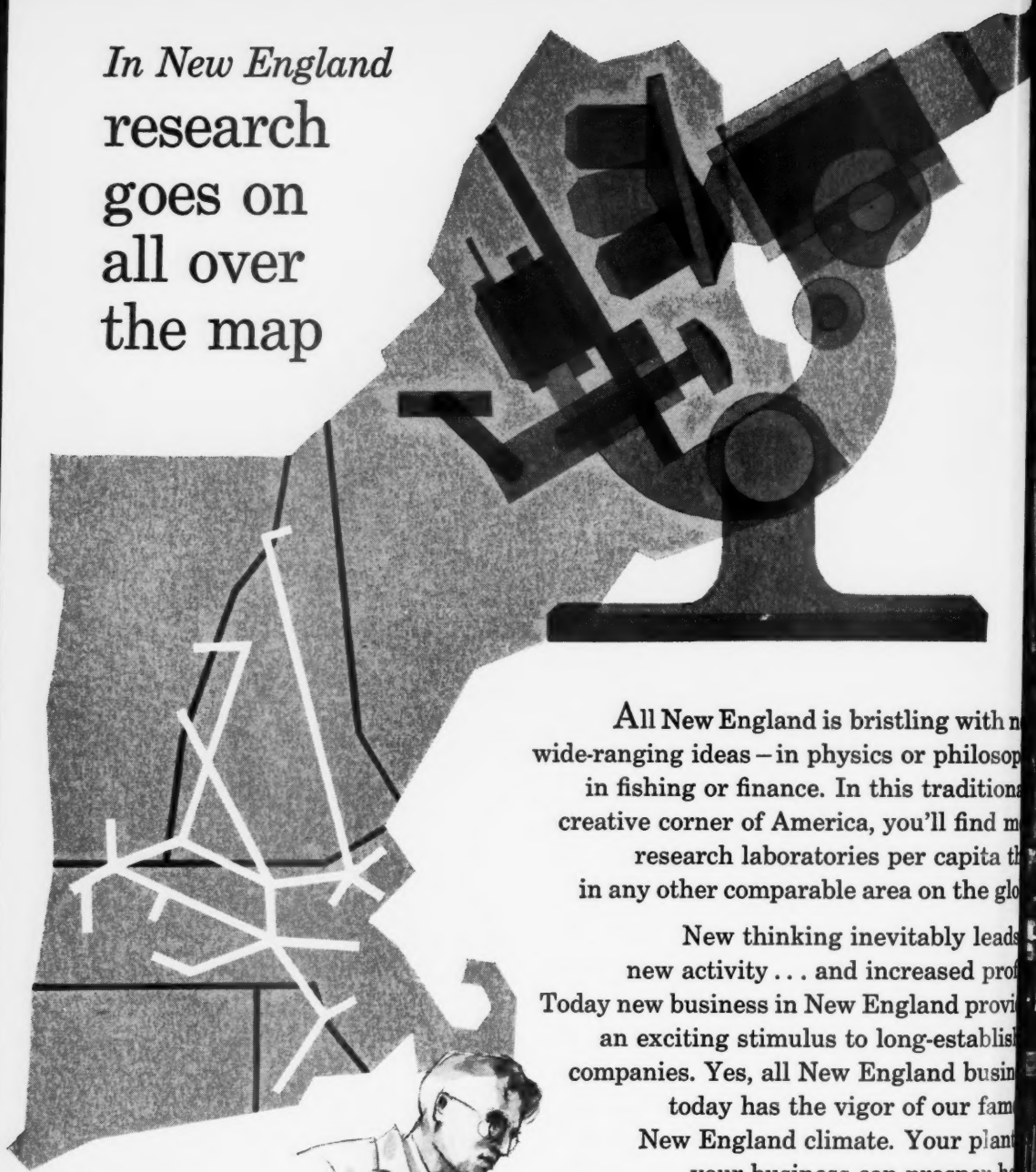

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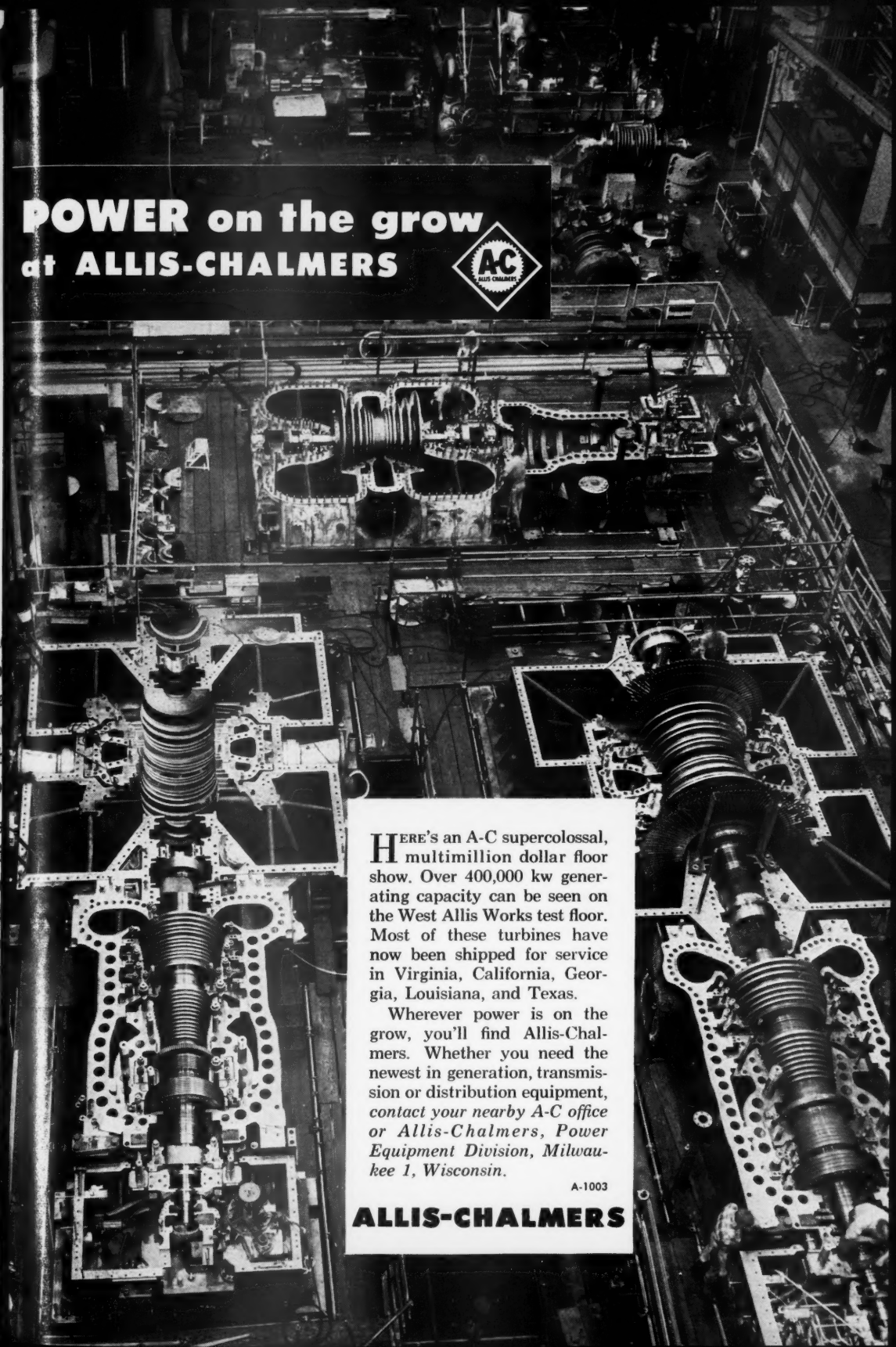

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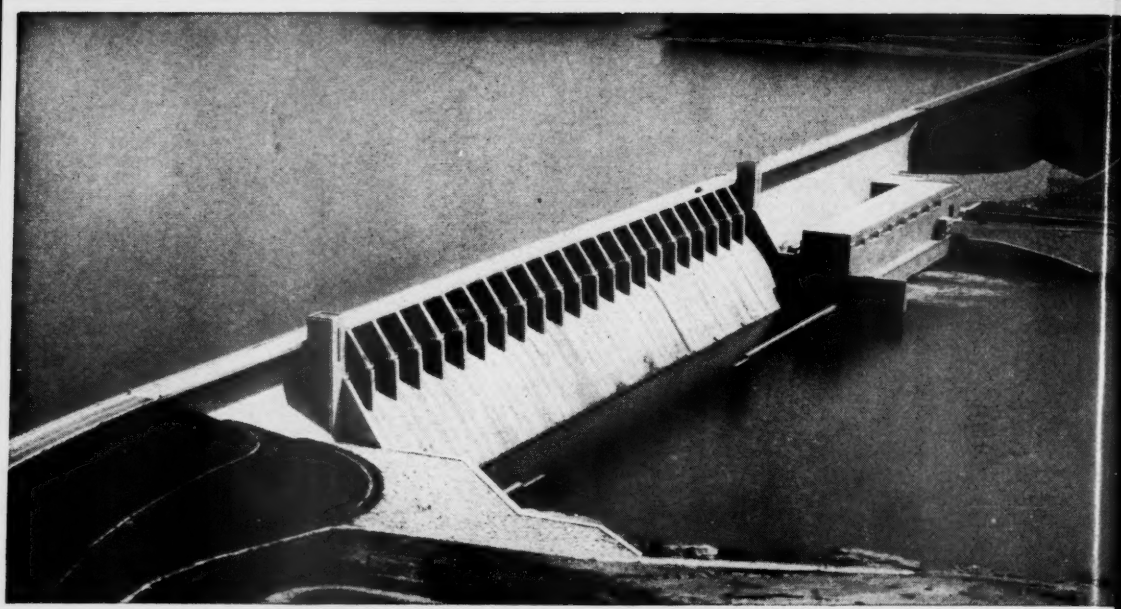

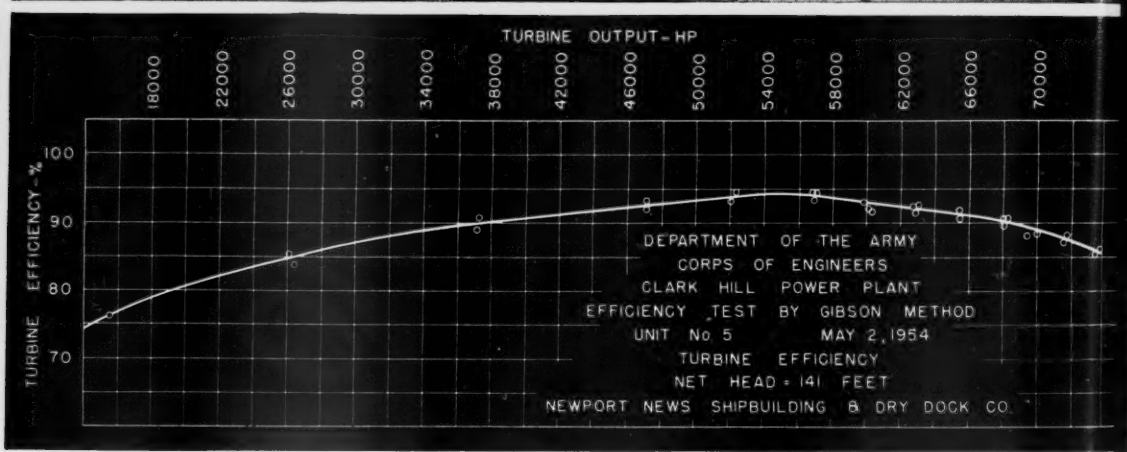

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Reflects advanced practices at Newport News

THE GRAPH shows performance of a 55,000 horsepower turbine, one of seven such units built by Newport News for the Clark Hill Power Plant (see photo).

Shape of the curve is typical . . . not exceptional . . . for Newport News turbine performance. Regular, uniform, showing no-cut-off at full load, it indicates consistent delivery and stable operation.

And especially, experience in design and model testing.

At Newport News, turbine runners are continually being designed and redesigned for improvements in performance. And often upon receiving a contract fo turbines, a model setting is built and complete test made. So far, Newport News has filled turbine con tracts with an aggregate rated output in exce s o 7,000,000 horsepower.

Penstocks, spiral casings, valves, pumps, rack ake and other essentials are also designed and built b Newport News. Our illustrated booklet, "WA ER POWER EQUIPMENT," will be sent to you upo request.

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From the industry's earliest days, The First National City Bank of New York has been an important money supplier for important power suppliers. In our Public Utilities Department, Citibankers who know all aspects of utility financing bring the Bank's skill and dollar resources to bear upon the utility industry's ever-growing construction needs. This outstanding Public Utilities Department staff is one good reason why utility men so often come to First National City *first.*

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A record of world-wide confidence in BROWN BOVERI EHV transformers and air-blast circuit breakers has been established through actual use and top performance. Maximum design voltage of most of this transmission equipment is 460 KV. Pioneering research and development of transformers and air-blast breakers rated up to 650 KV is in progress at BROWN BOVERI.

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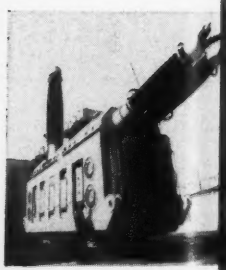
The complete record is yours for the asking.

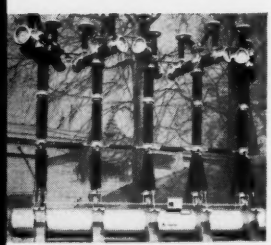
EHV TRANSFORMERS

Client and Shipping Date	KVA and Voltage Rating
Krangede AB Sweden 1956	two banks 130 MVA each, 13.8/400 kV step-up generator transformers
Kraftwerke Hinterrhein Switzerland 1957	two banks 400/280/187 MVA 420/201/10 kV *regulating* auto-transformers
RWE Germany 1958	one bank 660 MVA, 400/230/30 kV *regulating* auto-transformers
EDF France 1958	one bank 300 MVA, 380/230/10 kV
Imatran Voima Oy Helsinki, Finland 1960	four single-phase three-winding auto-transformers, three-phase bank rating 420/420/55 MVA, 380/238/20 kV

EHV AIRBLAST CIRCUIT BREAKERS

Client and Date of Order	Quantity	MVA & Voltage Rating	
KVS Sweden 1951	10	10000	400 kV
Kamijoki Finland 1955	2	10000	380 kV
Quebec Hydro 1954	23	10000	300 kV
Imatran Voima Oy Finland 1956	2	10000	380 kV
Quebec Hydro 1956	39	10000	300 kV
Imatran Voima Oy Finland 1957	5	10000	300 kV
Imatran Voima Oy Finland 1957	1	15000	400 kV
American Electric Corp. 1957	2	25000	345 kV
RWE Germany 1957	2	15000	400 kV
Aluminium Co. Canada 1957	4	15000	300 kV
Krangede AB Sweden 1957	2	15000	400 kV
Aluminium Co. Canada 1957	5	10000	345 kV
Aluminium Co. Canada 1957	4	10000	345 kV
Aluminium Co. Canada 1957	5	10000	345 kV
Motor Columbus Switzerland 1957	2	15000	400 kV
Imatran Voima Oy Finland 1957	3	15000	400 kV
KW Vorderrhein Switzerland 1958	6	15000	400 kV
Kemiyoky Oy Finland 1958	1	15000	400 kV
Electricity Supply Commission South Africa 1959	16	15000	275 kV





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19 Rector Street, New York 6, N. Y.

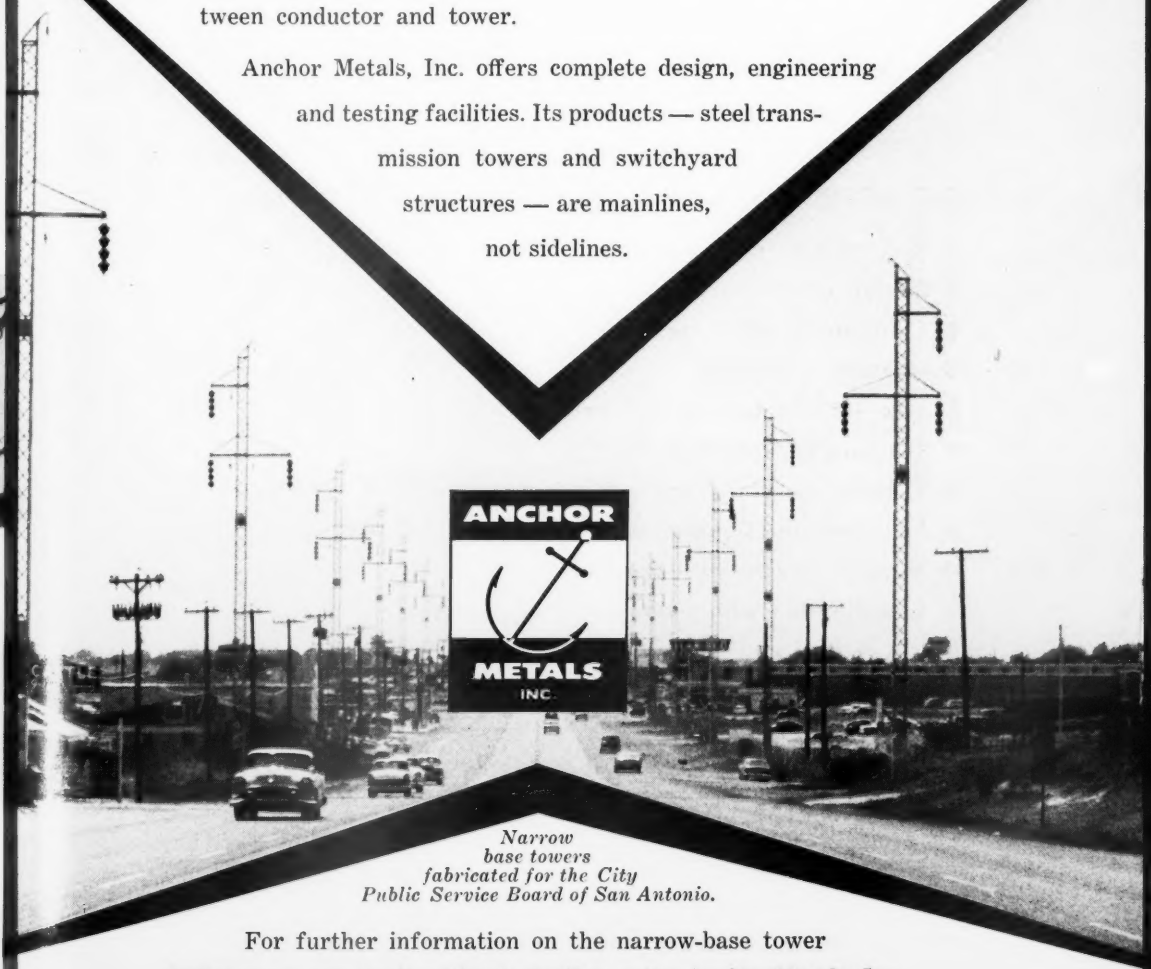
PROBLEM: Right-of-Way . . .
SOLUTION: Narrow-Base Towers

pid growth of the nation's urban centers during the past decade has presented many problems. ot t e least is one still faced by many electric utilities — the acquisition of right-of-way for new ansmission lines.

st of obtaining easements or the outright purchase of right-of-way inside city limits has skyrocketed d is often far greater than the actual cost of the line itself. Installation of underground cables is ohibitive in many cases.

narrow-base steel tower, designed by the skilled engineering staff of Anchor Metals, Inc., has proved to be an economical solution to right-of-way problems. The tower's base is only 24 inches square. It utilizes short arms and post type or pin cap insulators with a special type hanger to prevent overhanging or property lines and to maintain adequate clearances between conductor and tower.

Anchor Metals, Inc. offers complete design, engineering and testing facilities. Its products — steel transmission towers and switchyard structures — are mainlines, not sidelines.



Narrow base towers fabricated for the City Public Service Board of San Antonio.

For further information on the narrow-base tower design or on any Anchor Metals facility, **write Anchor Metals, Inc.,**

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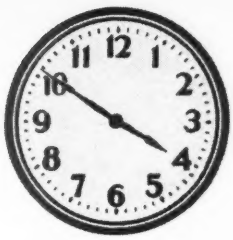

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You can choose a powerful V-8 or thrifty Six, 3- or 4-speed transmission—even push-button automatic LoadFlite. See your Dodge dealer about this Tradesman, or any Dodge truck up to 49,000-lb. G.V.W. Power Giants. Find out why . . .

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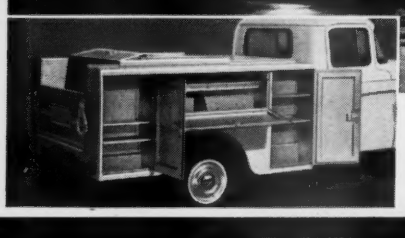
it's real smart
to choose **Dodge Trucks**



A king-sized tool chest on wheels . . . that's the Dodge Tradesman's
Tools and supplies stow neatly, where you can reach them quickly. A
for everything. All compartments lock. Available sliding roof pr
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Blown out by Mr. Edison and friends!

Read how banks helped the electric light illuminate all America

One idea made the kerosene lamp obsolete.

But it has taken billions of dollars to replace it, and much of the money has been provided by loans from commercial banks. The story goes like this:

After Mr. Edison and his private backers proved the new incandescent lamp practical, progressive men the country over saw that electric light could be sold cheaply to all the people.

From the first, the job was too big—too costly—for any individual to tackle. So groups of citizens got together and formed light and power companies.

Then, as the industry expanded, even the most prosperous companies lacked enough hard cash for generating more power, stringing up miles of new wire, and delivering current to millions of new consumers. So they turned to the nation's banks for assistance.

In less than half a century America was able to put the kerosene lamp on the museum shelf.

But there is nothing exceptional about this example of banking's contribution to progress. The simple fact is that it is banking's job to put the community's idle money to work wherever and whenever bankers find opportunity for profitable enterprise.

Money at work in utilities or any other industry results in jobs for men and women, returns for investors, and a high standard of living for the American people.

The Chase Manhattan Bank of New York, a leading lender to American industry, is proud of the part it is playing in our nation's progress.

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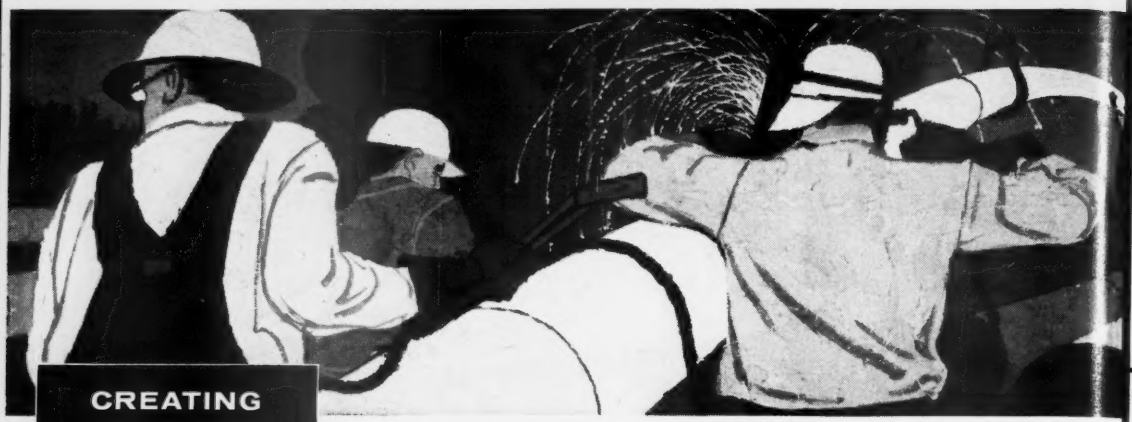

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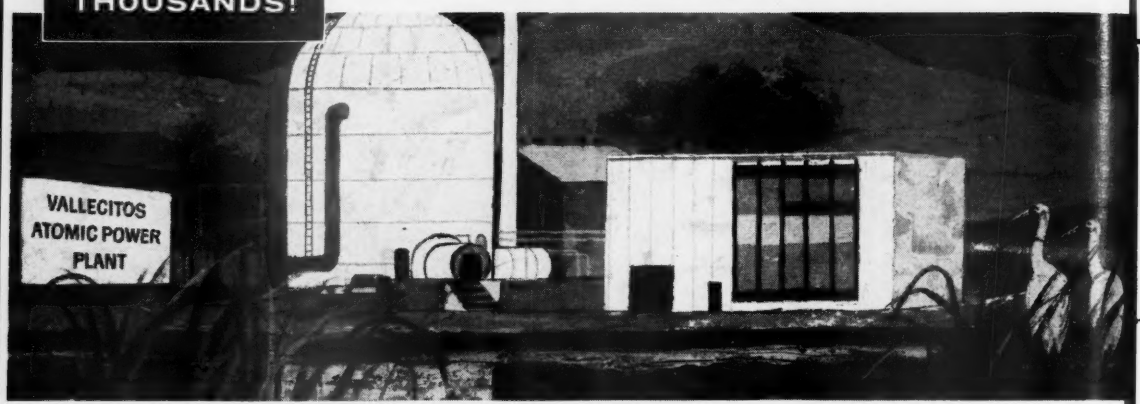
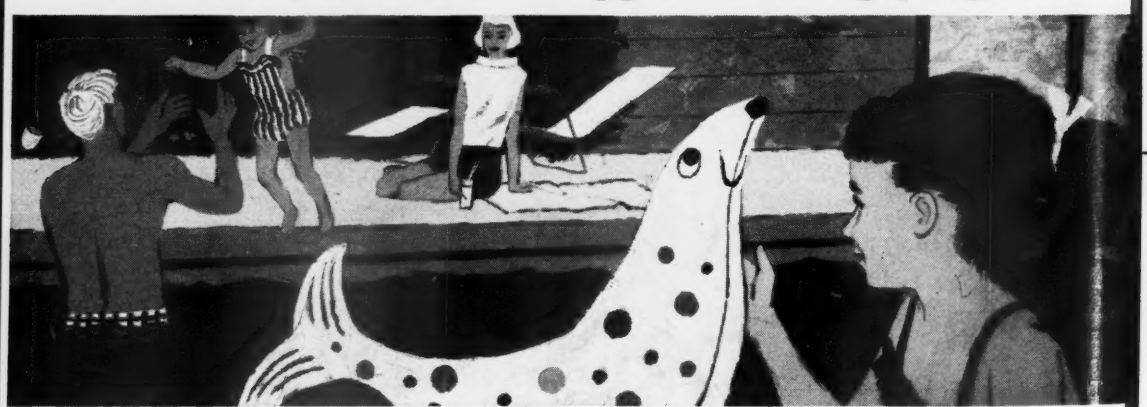


with one of America's biggest building programs



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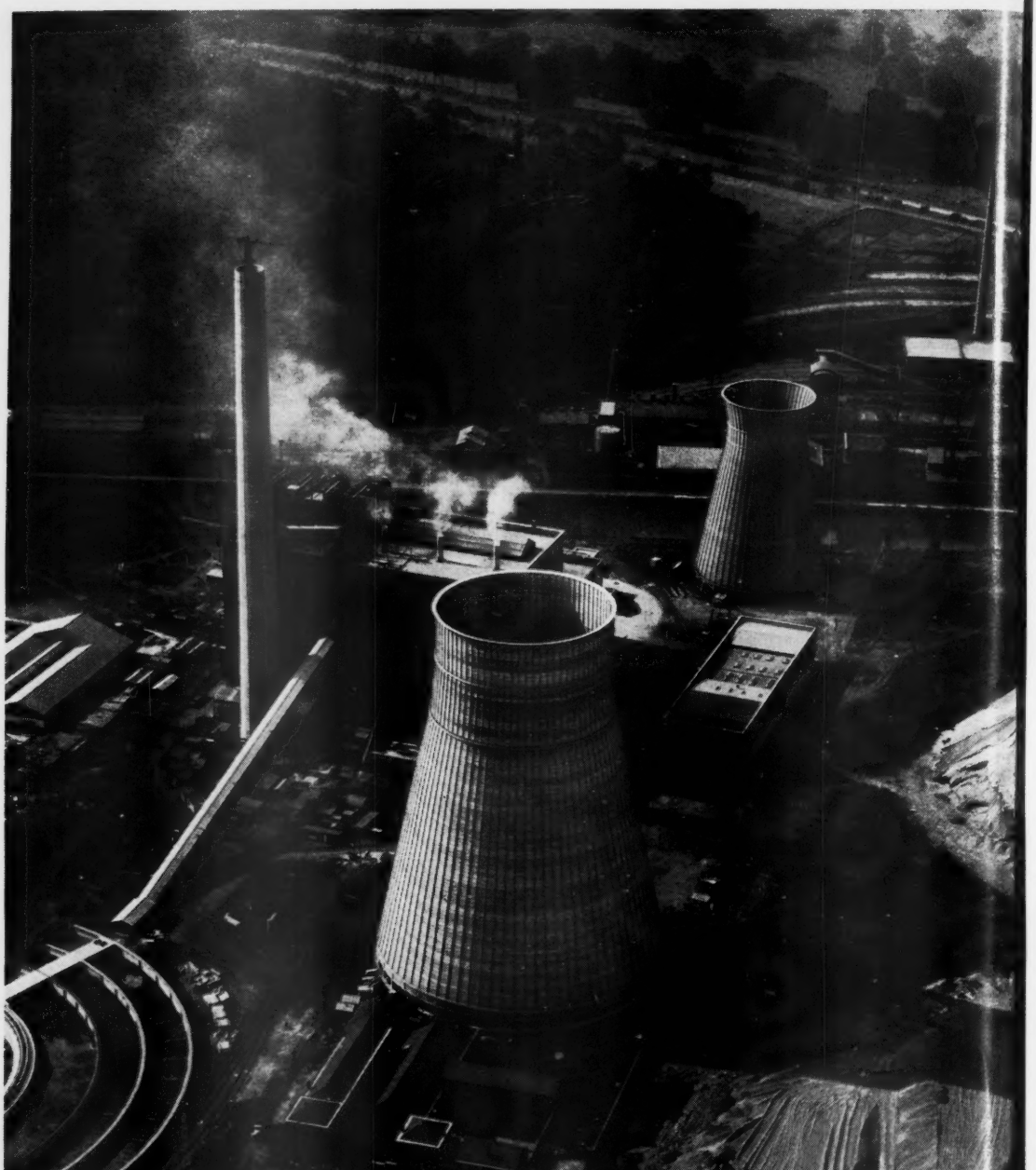
It's like a city the size of Syracuse moving into Northern and Central California every year . . . bringing along its earning-power, producing-power, and buying-power. To supply the snowballing demand for gas and electricity, P.G. and E. has thousands of workmen going full blast on hundreds of building projects. Already, P. G. and E.'s post-war construction has passed the $2 billion mark! *It's a big job serving the growingest state in the nation.*

PACIFIC GAS AND ELECTRIC COMPANY

UTILITIES
A·l·m·a·n·a·c·k

APRIL

Thursday—9 *Pacific Coast Electrical Association ends two-day administrative services conference, Long Beach, Cal.*	**Friday—10** *Fifth Nuclear Congress ends, Cleveland, Ohio.*	**Saturday—11** *Chamber of Commerce of the United States will hold annual meeting, Washington, D. C. Apr. 26-29.* ***Advance notice.***	**Sunday—12** *Association of National Advertisers begins annual West coast meeting, Santa Barbara, Cal.*
Monday—13 *Ohio Telephone Association begins annual convention, Columbus, Ohio.*	**Tuesday—14** *American Institute of Electrical Engineers begins electric heating conference, Philadelphia, Pa.*	**Wednesday—15** *Missouri Valley Electric Association begins engineering conference, Kansas City, Mo.*	**Thursday—16** *Southeastern Association of Railroad and Utilities Commissioners begins spring conference, Miami Beach, Fla.*
Friday—17 *Public Utilities Association of the Virginias, Executive Committee, begins meeting, Richmond, Va.*	**Saturday—18** *American Water Works Association, Arizona Section, ends three-day meeting, Phoenix, Ariz.*	**Sunday—19** *Edison Electric Institute, Statistical Committee, will hold meeting, Detroit, Mich. Apr. 30-May 1.* ***Advance notice.***	**Monday—20** *Edison Electric Institute-American Gas Association begin national conference of electric and gas accountants, Chicago, Ill.*
Tuesday—21 *Illinois Telephone Association ends two-day annual convention, Peoria, Ill.*	**Wednesday—22** *American Institute of Electrical Engineers, East Central District, begins meeting, Akron, Ohio.*	**Thursday—23** *American Water Works Association, Pacific Northwest Section, begins meeting, Vancouver, British Columbia, Canada.*	**Friday—24** *Indiana Gas Association ends two-day meeting, French Lick, Ind.*



Concrete Cooling Towers in Belgian Power Plant

Co-ordination of power planning results in the addition of a 125,000-kilowatt unit to an existing 30,000-kilowatt unit station at this power plant in Monceau-Fontaine, Belgium. The towers are cooling units and are built of reinforced concrete. *(See article this issue, page 541.)*

Public Utilities
FORTNIGHTLY

VOLUME 63 APRIL 9, 1959 NUMBER 8

Your Future—Your Reward—Your Duty

By J. E. CORETTE*
President, Edison Electric Institute

Today there are trends that threaten the foundations of our freedom. Too much government in business! Too high taxes! Too many government subsidies! We must guard against socialization of the electric industry. In addition to tax-free government competition and rate regulation, electric utilities are now faced with an effort to penalize their advertising and abrogate their right of free speech.

TODAY America stands as the world's outstanding example of freedom. In this country a person can own and operate any business he likes. He can work at any job he likes in any part of the country he likes. He can retain any profits or savings which he honestly makes. He has the many protections that result from our Constitution and our Bill of Rights, such as freedom of speech, freedom of religion, and the right to own and keep property, and freedom from search and seizure.

*Also president of The Montana Power Company. For additional personal note, see "Pages with the Editors."

Trends in America

To preserve those things which make America great, we must always be considering what is going on in this country, what the trends are in this country, and where they lead. Because, ordinarily, once you have lost a right or a privilege, it is too late to do anything about it.

Government in America today has what has been called political elephantiasis, as is clearly indicated in the following official statement made by the late Rowland Hughes, at that time Director of the Bureau of the Budget:

The federal government is, among other things, the largest electric power producer in the country, the largest insurer, the largest lender and the largest borrower, the largest landlord and the largest holder of grazing land, the largest holder of timberland and the largest owner of grain, the largest ship owner and the largest truck fleet operator. For a nation which is the citadel and the world's principal exponent of private enterprise and individual initiative, this is an amazing list.

A RECENT Budget Bureau report found the federal government engaging in approximately 20,000 commercial business enterprises, each of which could have been handled by an investor-owned business.

The federal budget has increased as follows:

	Federal
1941	$13,262,000,000
1948	$33,069,000,000
1952	$65,408,000,000
1957	$69,433,000,000
1959	$80,871,000,000

While it is recognized by all that a good part of the increase in the federal budget is for defense purposes, many billions of it are due to additional federal activity in fields which are directly competitive with business.

In the electric power field, government-owned or financed generating capacity has increased as follows:

1932	7% of the total
1940	14% of the total
1950	20% of the total
1957	25% of the total

The TVA revenue bond bill now pending in Congress would make TVA more and more a tax-free commercial enterprise.

IT is anticipated there will be introduced in Congress a Columbia Valley Development Corporation Bill, somewhat comparable to the one introduced in the last session of Congress, which would create a new federal corporation managed by five appointees of the President to take over the facilities and marketing duties of the Bonneville Power Administration and supply most, if not all, of the future power requirements of the entire Pacific Northwest part of the United States.

This Columbia Valley Development Corporation could finance its requirements by the issuance of revenue bonds which the Secretary of the Treasury would be required to buy at an interest rate below the interest rate which the federal government pays for long-term money.

In the last Congress there was introduced, and I assume it will probably be reintroduced at some future time, a Great Plains Administration Bill. This would create a federal corporation managed by five persons appointed by the President, to operate in the Great Plains area of the United States and from the Canadian to the Mexican borders. This giant government corporation would be authorized to engage in any business relating to farming, livestock, oil, gas, minerals, timber, or power production.

These trends in America, if not stopped, can well lead to the federal government becoming so involved in business that the result will be destructive tax burdens on tax-paying business, lack of incentive, lack of productivity, and the destruction of not only the great freedom which we have, but of the remarkable benefits to every workingman in America which come from our present system.

America's Superior System

THE great examples of the opposite systems of government and business in the world are the United States and Russia.

Few people ever specifically compare the effect of these two systems on what each produces for the individual who works in that system.

The United States has one-sixteenth or only 6 per cent of the world's population and occupies only one-sixteenth of the world's surface. But the United States has three-fifths or 60 per cent of all the automobiles in the world; one-half of all the telephones in the world; one-half of all the radios in the world; and two-thirds of the world's television sets.

The United States consumes: three-fifths or 60 per cent of the world's oil; one-half of the world's coffee; and two-fifths or 40 per cent of the world's electricity.

U. S. factories produce about one-half the world's goods.

THE table below shows the benefits which come to the worker from the American system, as compared to the Russian system.

Is it not worth an unlimited amount of thought and effort on the part of every American citizen to preserve the system of business and government which gives to the people as much for every hour of work as is indicated by the facts in the table?

Wage Earner Bears the Greatest Load

THE wage earner is the one who must bear the greatest load. How many people realize that 50 per cent of the total revenue of the federal government comes from the personal income tax, and that 60 per cent of the personal income tax is paid by wage earners who have an adjusted gross income of less than $200 per week?

The facts are that the income of the federal government comes from the following:

Personal Income Tax	50%
Corporation Income Tax	30%
Excise Taxes	13%
All Other	7+%

Although people with adjusted gross income in excess of $25,000 per year are taxed at a very high rate, there are so few of them and the amount of income involved in these brackets is so small that they pay only 21.9 per cent of the personal income tax.

These facts indicate why President Eisenhower, in the papers throughout the nation of Thursday, February 12th, was quoted as saying that America is now faced with a choice between government living within its means or following "the

In the United States, 1.2 days of work In U.S.S.R., 25.5 days of work	buys a radio, table model
In the United States, 3.3 days of work In U.S.S.R., 36.7 days of work	buys a man's wool suit
In the United States, ½ hour of work In U.S.S.R., 7.2 hours of work	buys a pair of nylon stockings
In the United States, 4.9 hours of work In U.S.S.R., 49.3 hours of work	buys a pair of women's oxfords
In the United States, 18.6 min. of work In U.S.S.R., 131.1 min. of work	buys a dozen eggs

ruinous route of free republics of the ages past—the route of deficit spending, of inflation, of taxes ever rising until all initiative and self-reliance enterprise are destroyed."

Electric Utility Industry Vitally Interested

THE electric utility industry is the No. 1 target of the Socialists and of those who seek to change our system of government.

This gives the utility industry a vital interest and gives all good American citizens a vital interest in the future of the utility industry because the destruction of that industry could lead directly to socialization of other industries in America.

The electric utility industry has proven that it is one of the most stable and one of the most important in the entire American economy.

Stability of Electric Utilities in 1958 Recession

THE 1958 recession constitutes an outstanding demonstration of the importance of the electric utility industry to the economy.

During that year, the following situation existed:

1st. Corporate profits suffered one of the sharpest drops in history and were down 18 per cent from the previous year.

2nd. Investment in new plant and equipment nationally was $37 billion, and was $6 billion below the previous year.

Now, let us look at the electric utility industry which:

1st. Spent $3.8 billion on new plant and equipment. This was an all-time high and was $100 million above 1957.

2nd. New generating equipment was installed having a capability of more than 14 million kilowatts; this marked the largest annual installation in history. More than 11.5 million of these 14 million kilowatts were added by investor-owned companies.

3rd. The $3.8 billion invested by the electric industry in new plant and equipment was one-eighth or 12.5 per cent of the investment for all American industry.

4th. Kilowatt - hour output also reached a new high of 645 billion kilowatt-hours, which was an increase of 13 billion kilowatt-hours over 1957.

WITH corporate profits of all industry dropping 18 per cent in 1958, let us now look at what happened in the electric utility industry:

Revenues exceeded 1957 by $362 million, or 4.5 per cent.

Net income exceeded 1957 by $107 million, or 7.5 per cent.

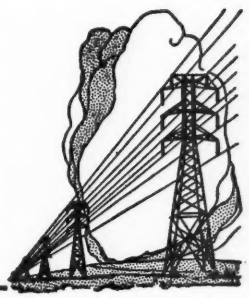
With this remarkable record of growth, development, stability, and contribution to the economy by the electric utility industry in the recession year of 1958, it then becomes very interesting to consider what that industry anticipates for the next ten years.

Electric Industry Progress Will Continue in the 1958-68 Decade

IN this industry, because of the time involved in the construction of major installations, it is always necessary to look many years ahead so we have made some 10-year forecasts. They are based on pro-

Electric Utilities--Prime Socialist Target

"THE electric utility industry is the No. 1 target of the Socialists and of those who seek to change our system of government. This gives the utility industry a vital interest and gives all good American citizens a vital interest in the future of the utility industry because the destruction of that industry could lead directly to socialization of other industries in America. The electric utility industry has proven that it is one of the most stable and one of the most important in the entire American economy."



jecting past experiences, on knowledge of present-day facts, on some knowledge of future requirements, and on seasoned and experienced judgment.

These predictions involve two basic assumptions; namely, that there will be no major war, and that there will be no basic change in the free enterprise system as we know it today.

We predict that by 1968, the following will exist:

Generating capability will almost double and will reach 290 million kilowatts.

Customers will increase by at least 13.8 million, or 24.6 per cent, or to a total of 70 million customers.

Output of electricity will more than double. It will, by 1968, exceed 1.3 trillion kilowatt-hours.

Capital investment in plant and equipment will increase from $40 billion to $86 billion, or 115 per cent.

Revenue will be approximately $20 billion, or more than two times the 1958 figure.

THIS extensive development in the electric utility field will necessarily be a great stimulant to many other businesses in America because everything which the electric utility industry uses for construction or in any other part of its business must be manufactured and sold to it by some other concern.

Local, state, and the federal government will benefit materially from this enormous expansion program of the electric industry by reason of the fact that taxes will undoubtedly continue to represent approximately 23 per cent of the total revenues, and 5 per cent of the total plant account.

In my judgment, the utility industry can take great pride in the leadership which it is exercising and in the progress which it anticipates in the future. The past record demonstrates that the forecasts of this industry have been consistent and have been accomplished.

Electrical Development in the United States Far Exceeds Russia

STATEMENTS have been made that Russia's development in the field of electricity exceeds that of the United States.

It is true that Russia is making important progress, but Russia is decades behind the United States, and our annual construction program is far greater than

Russia's. Let us look at a few specific facts:

Soviet total electric-generating capacity at the end of 1957 was less than the total of new kilowatts installed and to be installed for the four years 1958-61 by the U. S. electric industry.

The total in the U.S.S.R. as reported by the Soviet Power Ministry was 48.3 million kilowatts at the end of 1957. During the four years 1958-61, the United States will have installed a total of more than 50 million kilowatts.

Premier Khruschev announced last November that the Soviet government expects annual Russian output of electric power to reach 500 to 520 billion kilowatt-hours in 1965. By the same year, United States output is expected to reach 1¼ *trillion* kilowatt-hours annually. In considering a comparison of this kind, it should be recognized that the Russians have a history of consistency in failing to reach goals such as they have set in electric power, while in the United States, the electric industry has a long-established record of making carefully considered predictions and then exceeding them in actual growth.

In electric-generating capacity, the Soviet Union has announced plans for adding 60 million kilowatts by 1965. The total to be reached by that year would be 108 million kilowatts for Russia, if its expectations are met. This compares with an estimated 250 million kilowatts which the United States will have installed by 1965.

THE Soviet Union plans to add an average of about 7.5 million kilowatts a year to 1965. During the same period, the United States will be adding an average of over 14 million kilowatts annually.

Total electric sales per capita in the United States in 1957 were four times those of the U.S.S.R.

In 1957, the United States generated about 4,180 kilowatt-hours of electricity per capita. Russian per capita production in the same year was 1,045 kilowatt-hours. Soviet output per capita now is about where the United States was in 1936—some twenty years behind.

I believe that the chart (page 511) is the best demonstration which I have seen of the comparative progress of the development of electricity in the United States and in Russia in past years.

The figures which I have given you clearly show that the United States will continue in future years to outdistance Russia in the development and use of electricity in very much the same manner as it has in the past, as shown by the chart.

Serious Problems of the Electric Industry

IN writing or speaking about this industry, one is always aware of the problems which exist.

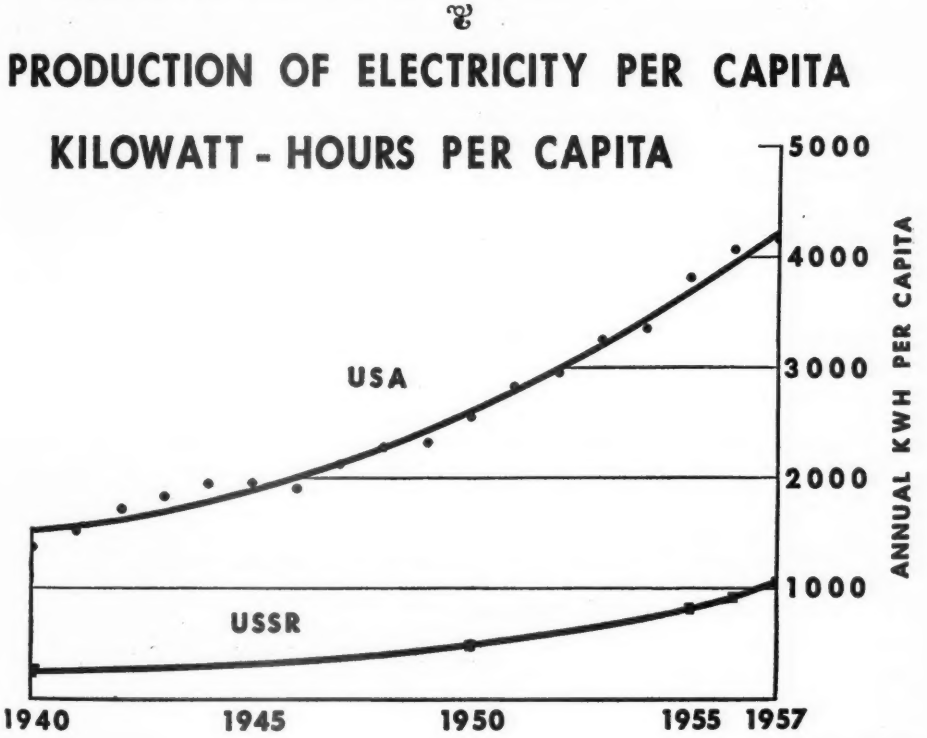
In addition to the problems which confront every other industry, of inflation, shortage of trained labor, the employment of competent technical personnel, the obtaining of adequate financing, efficient management, and many others, our industry always has the major problems of tax-free and subsidized government competition, rate regulation, and now a new and serious threat in the form of an effort to curtail the industry's advertising and its right of free speech.

In an attempt to acquaint more Americans with these facts, a number of electric companies joined together in the Elec-

tric Companies' Advertising Program (ECAP). For some years this group has sponsored advertising in national magazines in an attempt to meet the threat posed by government competition in our industry.

About a year ago, Russell C. Harrington, then Commissioner of Internal Revenue, advised Senator Estes Kefauver that the costs of this advertising paid by participating companies were not deductible for income tax purposes. In August, the Federal Power Commission issued an order questioning the accounting treatment which 76 electric companies gave to the cost of nine of the 1957 advertisements.

At this time the case is pending before the Federal Power Commission, and hearings are expected before the Internal Revenue Service soon. The companies look forward to the opportunity of demonstrating, in the words of A. J. G. Priest, "that every investor-owned company is threatened by the activities of government power; that the managements of such companies have the obligation (a) to explain and advance their competitive position among present and prospective security holders, customers, and employees, and (b) to answer the vilification to which they are subjected by government power advocates, thus preserving the integrity and good name of the enterprise; that this obligation, and hence the companies' business interests, are served by the Electric Companies' Advertising Program."



It is interesting to note that the companies' position is endorsed by the National Association of Railroad and Utilities Commissioners, as well as several organizations representing the press.

This penalty on advertising and free speech, in my judgment, is a real threat to the future of American freedom and American progress. It is a foregone conclusion that if the tax authorities can decide for the electric utility industry what advertising expenses are necessary and ordinary expenses of business and deductible for tax purposes, the same tax authorities can make a similar decision for any other American business.

The utility industry is vigorously opposing this contention, both before the Federal Power Commission and before the Commissioner of Internal Revenue.

Our Most Important Dedication

MANY people in American business have developed a new dedication. We have pledged to dedicate ourselves to doing a much more comprehensive and better job of informing all of the American people of the facts relating to our form of government and our economic system.

WE believe that the American people as a whole, including ourselves, have failed to appreciate the remarkable personal benefits which come to every wage and salary earner and every investor in America from our system of government and our system of business.

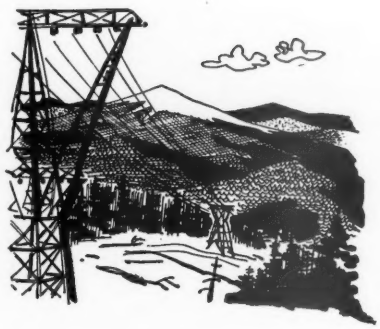
We believe that the American people fail to realize the inevitable result if there is a continuation of many of the programs which are gradually taking hold in this country.

We believe that there is no more important duty as an American citizen than that of informing ourselves about what is going on in local, state, and federal government and devoting a good part of our time to passing this information on to others.

I urge all who read this article to immediately dedicate themselves to taking a greater interest in governmental affairs and to increase by many times their studies and activities to preserve the freedom, the privileges, and the personal benefits which we have in this country.

"SOME people seem to believe that 'government' or the 'state' or some political device can supply goods or services to them 'free.' There is no political device—no method of voting—which will provide anything 'free.' Someone must produce the goods or render the service. If payment be not made by the recipient, then the government must force someone else to pay for it. The exercise of such governmental force involves expense to the government. That expense also has to be paid for. So the recipient of 'free' goods or services always receives less in goods or services from the government than the government takes from those who pay for them. In that manner the total of satisfaction of wants is diminished—not maximized."

—JAY MORRISON,
Retired official, Boeing Airplane Company.



The Vast Potential Of More Power Usage

By R. S. STEVENSON*
President, Allis-Chalmers Manufacturing Company

Although the electric utility companies of the United States have turned in a marvelous performance over the years in meeting the phenomenally increasing demands of power supply, a vast potential of new and increased applications of electric power uses still remains unexploited. The benefits from such utilization are so many and so great for all concerned, our real problem may be how to avoid the disadvantages of delay.

THE electric utility industry has successfully met the challenge imposed by constantly increasing demands for more power. It has done a remarkable job in the light of a startling population growth and concurrent industrial expansion. As ever, the electric utilities stand ready to supply power where needed and in quantities sufficient to meet the demand.

It should be noted that the cost of electric power remains relatively low despite inflationary tendencies in almost all other areas. This is a credit to the stability and operating efficiency of the industry.

Not to be overlooked is the contribution the utilities are making toward the development of new uses for electric power. Factories and farms, for example, owe much of their mechanization to electricity.

*For additional personal note, see "Pages with the Editors."

Electric living in the home promises to reach still greater heights. The use of electricity to heat homes has only recently gotten a foothold and doubtless will be quite common in a very few years.

Consider the easy availability of electric power. The electricity is on tap when the consumer wants it. Unusually heavy loads at peak consumption times are balanced by stepping up the production rate in the power station. And the standardization of frequencies and voltages makes it possible to use equipment and appliances anywhere in the country. This feature is unheard of in a number of foreign countries.

STILL, with all these advantages, there are many factories, stores, and homes which are deficient when it comes to full

capacity use of electric power. A definite sales and development potential lies in the improvement of illumination and ventilation facilities in our industries. Promotion of adequate wiring is necessary in order to expand the market for appliance sales. A strong selling job remains to be done.

The electric utilities and equipment manufacturers have done a good job in providing a service, but there is still room for improvement. We can do even more by convincing the public that electric power and what it can do is vitally linked to a healthier economy and a better standard of living. In short, by getting across our story that power is progress.

Power Key Factor in Living Standards

IT is my earnest conviction that the use of power is the most important single factor responsible for our high standard of living today. I am quite sure that is true in comparing European economies with ours and it is, of course, even more true in making comparisons between the United States and the so-called underdeveloped countries. When power is lacking, there is only one substitute and that is human or animal muscles. Both of them are such expensive power sources that their use drags a whole economy downward.

Cheap and adequate power, of course, has a pleasant by-product—it makes possible large numbers of appliances and gadgets to make our living more pleasant, once we have the high standard of production and income which the power has brought us.

A long time ago some engineer estimated that a man only developed one-tenth of a horsepower. We hear lots of discussions about productivity today, and while the workman may use more skills, he certainly does not use more physical energy. Power does make the difference, and our steady growth in productivity per worker, amounting to slightly over 2 per cent a year compounded, can be credited only to the additional power used per worker and his greater skill in using it. Since 1950 we have increased the power for each producer by 50 per cent, and in 1957 we find that each man on a job used nine kilowatt-hours for each hour he worked—a nice addition to the one-tenth horsepower which was his original standard equipment. While that figure in itself is impressive, the future estimates are even more so. One authoritative source believes that each individual worker will require twice as much power twelve or thirteen years from now as is being provided for him today.

FOR example, nowhere in the world does power make the difference that it does in the Pacific Northwest. We were fortunate in that area—we began to harness our water power very early and have always been able to stay ahead of the requirements. Besides that, in our manufacturing operations we installed most of our mills and plants as efficient, all-electric operations from the beginning. This region has grown, assuming adequate electric power.

That is, of course, one of the reasons why our Northwest has grown faster than the rest of the nation and will continue. And that is another reason why the electric utility industry in the Northwest must not only continue to be ready, but must continue to provide leadership. Growth is inevitable, but I think the speed

of growth is controllable. In other words, I believe that the industry's own decisions may have something to do with whether or not it grows faster or slower than might be normally projected.

Considerations of Growth

In my opinion there are only two things that could slow the growth of the electric utility industry—the first would be a misunderstanding of this industry by the public, and the second (which might result from the first) would be an inability to earn enough profits to finance the growth. I am hopeful that neither one of these deterrents will slow this industry down, and that it is going to give so much attention to its public relations that its right and requirement to earn an adequate profit will be accepted and even encouraged.

When I say that this industry can grow faster than the rate of growth which might be charted as normal or inevitable, I believe that—and salesmanship will do it. In this nation businessmen are in danger of becoming chartists. We chart the facts and then extend the dotted lines and say to ourselves that such and such is bound to happen. Maybe it will happen—on the average—but it does not necessarily have to happen to us, and certainly it does not have to limit us. In the company with which I am associated, our economists tell us what they think the general business climate will be, but they must not chart our sales goals. Those are in the hands of the salesmen and the sales managers. We like high goals.

I think the utility industry and the equipment manufacturers have a sort of partnership interest in seeking high goals set for the sale of power. If the utilities sell more electricity, they need more equipment to generate it and their customers need more equipment to use it. If we sell more electrical equipment to industrial or commercial or residential users, the utilities are obviously going to sell more electricity.

Sales Potentials Still Enormous

To take another illustration from the Northwest, sales to residential customers in that area took an early lead. Electric ranges were fairly standard while they were still a curiosity "back East." Only recently have eastern utilities touched the northwestern normal figure of 5,000 kilowatt-hours per residential customer. I was pleased to note recently that one of the American Electric Power

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¶ "INDUSTRY is, of course, fighting rising costs. Since 1947 wages in manufacturing industries have risen 68 per cent, while productivity has gone up only 32 per cent. Manufacturing technology has advanced so rapidly that many plants ten years old are obsolete from an efficiency standpoint. Realization of this prompted industrial firms to spend 48 per cent of their total outlays for plant and equipment on replacement and modernization in 1957. Manufacturers expected to spend 56 per cent of their outlays for such purposes in 1958, and by 1961 industry intends to devote two-thirds of its capital appropriations to replacement and modernization."

Company's subsidiaries in the Midwest had reached that figure for its system—an example of pure salesmanship. And we must all admit that saturation in the use of household electric power is still a long way off. There are lots of appliances yet to be sold, much better lighting still needed, and while the goal of the industry's residential sales calls for 5,700 kilowatt-hours per customer in 1965 and almost 8,000 by 1970, the goals of individual companies may be still higher. Salesmanship will reach them.

Then there are the important rural customer sales to be considered. As a boy I can remember visiting relatives on ranches many miles from town, who had electric service which was unavailable to most farmers except in the Northwest. While electric service is now generally available to farmers and ranchers in the Northwest and elsewhere, this is a market which has tremendous possibilities for increase in sales. Farms are becoming more efficient and as they do, the farmers are finding that adequate electric power is their cheapest investment and their best method of offsetting otherwise increasing costs. Nationally the Department of Agriculture is selling farmers on the fact that electric power is practically their only purchased commodity which has gone down in price, and that since 1940 its cost has been reduced 25 per cent.

On a national basis commercial kilowatt-hour sales increased almost 20 per cent from 1955 to 1957. They are due for a much bigger jump in the future. The growth in suburbia is, of course, only one of the reasons, and we are finding that this phenomenon is not limited to big cities. Shopping centers and other similar developments are present in small towns as well. The population is spreading out and along with it is coming modernization of attitudes toward lighting, light electric power uses, and air conditioning. On a percentage basis this category may well be our greatest sales opportunity—and one very susceptible to salesmanship by the equipment manufacturers and utility companies.

Are Plants Overexpanded?

There are a lot of discussions nowadays revolving around the question of whether we have overbuilt our industrial plant. I, for one, do not believe for a minute we have—and I speak as a representative of a firm which presently has considerable unused capacity. However, I am confident that we shall need it all. Industry has built this capacity because we had been pinched by shortages and saw opportunities. The opportunities are still here and are just as sure as the fact that there will be a 1959 and a 1960 following 1958. Besides that, it appears that the plants which we have now are bargains, and that we could never build them again at the investment which we now have in them.

We shall need more plants—and that is particularly true in those areas where industrialization is just beginning. Industry goes where there are markets (people) and where it can take advantage of the presence of raw materials and adequate power.

New Trend Developing

But, there is another phase which we are in danger of overlooking or underestimating. Industry's expenditures for plants and equipment have been chang-

Let's Spell out Foreign "Competition"

"AN hour of labor (including fringes) costs our American producers over $3. It costs our foreign competitors from 45 cents to 75 cents an hour. I submit that that is not competition. Our high standard of living and our high wages are tied together. I, for one, just do not believe that we should earn our income—in this case government income from high taxes—in one standard of economy and spend it in another. I do not believe that any of the electrical equipment manufacturers can be accused of being protectionists or narrow in their views on foreign trade, but I do believe our industry is entitled to a fair definition of the word 'competition.' "

ing lately and this change is important to the power business and to the equipment business. For the last several years a majority of industrial capital expenditures has gone into new facilities, but that trend is diminishing and a new direction is beginning to appear.

INDUSTRY is, of course, fighting rising costs. Since 1947 wages in manufacturing industries have risen 68 per cent, while productivity has gone up only 32 per cent. Manufacturing technology has advanced so rapidly that many plants ten years old are obsolete from an efficiency standpoint. Realization of this prompted industrial firms to spend 48 per cent of their total outlays for plant and equipment on replacement and modernization in 1957. Manufacturers expected to spend 56 per cent of their outlays for such purposes in 1958, and by 1961 industry intends to devote two-thirds of its capital appropriations to replacement and modernization.

Here is the opportunity for the electric power salesmen and the equipment salesmen. Let me cite an example from our own shops to illustrate how this movement benefits industry and the electric power business. In one department we recently installed seven new machine tools, each one replacing from one to three machines. The machines replaced had a combined output of 218 horsepower, but the new machines developed a total of 414 horsepower. Our electric bill went up, but we were glad to pay it.

How Utilities Could Sell More

ANOTHER illustration—we installed a modern 72-inch by 30-foot engine lathe which would lower our costs because of its higher feeds and speeds. Supposedly, this machine has an estimated life of thirty-five years—unless it is obsoleted before then, which I hope it will be. But, if we do schedule it fairly fully for the entire 35-year period, we are guessing our power costs will be about $65,000. That will be a pretty good electrical revenue from one machine, and again we are glad to pay it because it saves us money.

Incidentally, for what it is worth, I

have checked with some of our plant managers in our own manufacturing operations throughout the country and I found that with a few exceptions they believed that their local utility company could give them more help than they were getting in the area of advice on the better use of power for keeping their plant modern and the costs down. The utility industrial salesmen may have to learn something about conveyor systems to sell electric power. They might have to know machine tools and have some knowledge of general manufacturing processes and plant layouts, but I promise you that if they do, they will sell more kilowatt-hours for you and the customer will be glad to buy your product—because it saves him money.

Now I said earlier that there is a sort of partnership existing between the manufacturers and the utility companies. We hope they sell more electric power, and I think they hope we sell more electrical equipment. In closing, I should like to discuss a couple of unrelated subjects which I think have importance to both industries.

Foreign Competition

I SHOULD like to say a little about foreign competition in the heavy electrical apparatus field. There has been much said of late about the protests of some of the electrical manufacturers against the idea of governmental agencies purchasing foreign-built electrical generating and transmission apparatus. Because in the press these protests were often tied in with objections to foreign trade in general and to the backfire against the foreign aid bill, I believe a little clarification is in order.

I do not qualify to speak for the electrical manufacturing industry, but this is our appraisal. In our opinion there are two compelling reasons why electrical apparatus should not be purchased from overseas sources. The first has to do with national defense and the second with the nature of the competition.

THE national defense aspect is simple. Our ability to generate constant electric power is probably our greatest economic resource in time of war or extreme international tension. Heavy electrical equipment is not standardized, and the firm which designs and builds the equipment must repair and service it. There is a great degree of individualism in shop practice as well as in design. A war or effective blockade, which wiped out the original overseas manufacturing plant or denied free transportation of engineers, servicemen, and physical components, would surely mean hopeless delay in restoration of service in the event of failure of any facility.

Great Britain has recognized this fact, and in a statement of policy by its central electric authority says simply that "it would be unwise for the electricity supply industry (of England and Wales) to be dependent upon foreign manufacturers for spares and maintenance."

The other objection which I said had to do with "competition" really falls in the area of equity. I mentioned that this equipment is not standardized and, generally speaking, it cannot be due to the limited number of pieces purchased and the varying requirements. So, this heavy equipment is custom built, which, of course, means that it has a very high labor content. The labor content is approximately as high in our shops as it is in those

of the Europeans. An hour of labor (including fringes) costs our American producers over $3. It costs our foreign competitors from 45 cents to 75 cents an hour. I submit that that is not competition.

OUR high standard of living and our high wages are tied together. I, for one, just do not believe that we should earn our income—in this case government income from high taxes—in one standard of economy and spend it in another. I do not believe that any of the electrical equipment manufacturers can be accused of being protectionists or narrow in their views on foreign trade, but I do believe our industry is entitled to a fair definition of the word "competition."

Research and Efficiency Increases

NOW, for another point. Readers of this article are well aware of the increases in efficiency which are now available in electrical apparatus as compared with some years back. They also know about the additional types of electrical equipment and appliances which are continually being brought forth and which help a customer work better or live better and at the same time use more electricity. The point I want to make is all these things cost a whale of an amount of money in research. I cannot prove it because the figures are not available to me, but I think I have a basis for making an educated guess that the industries which serve the electric utilities and their customers are now spending about 7 per cent of their sales dollar on research and developments—*and they would like to spend more!* None of them is paying its stockholders an exorbitant rate, and the profits of the electrical equipment industry are modest in the extreme, to say the least. Therefore I submit that when the utilities buy electrical equipment, they are getting a good value and at the same time assuring themselves of future values, and I think I can be objective enough about it to say that paying a good price for a piece of equipment might be the wisest investment these companies could make in the long run.

FINALLY, there is no industry in America which needs to look ahead as does the electric utility industry. Because our nation is growing, its growth is assured, but it must assume the responsibility of leading that growth. It has always met its requirements. I know that it will continue to provide that leadership. America needs this because we have truly become an electrical economy. I know that the manufacturers will do their part to help the utilities fulfill their important obligations.

"ON one hand we are being harassed by restrictions preventing an expansion of productivity and on the other hand we see government considering barriers against advertising and thwarting access to news....

As to the blocks being set against advertising and access to news, you know, I am certain, that our crusade to protect the people's right to know will continue to be pressed by all of us with full and inspired vigor."

—WILLIAM DWIGHT,
President, American Newspaper Publishers Association.

Private Industry's Stake
In the Atom Power Race

By the Honorable ALBERT GORE*
U. S. Senator from Tennessee

The development of nuclear power has been relatively slow in the United States. There is an urgent need to achieve economic atomic power. The electric utility industry would benefit as would the manufacturers of electric equipment. Also the international political and propaganda advantages are enormous to the country which leads in the atomic race. To give atomic power impetus, the government must build more nuclear reactors which can be done without danger of any federal monopoly in the view of this author.

THROUGHOUT history, man's material progress has been measured by his ability to harness and use to advantage sources of energy to supplement his own manual efforts. There has been a steady expansion in the consumption of energy, particularly in recent years.

Measured by the requirements of the past, the present and future energy needs of the United States and of the world are tremendous. Whether we continue to advance and increase our standard of living, or whether we begin to retrogress, will be determined by our decision as to the course of action we should follow in the development of additional energy sources. Because of increasing mechanization, increasing travel and production, and the increasing demands of national security, we shall require in the years ahead far

*For additional personal note, see "Pages with the Editors."

greater quantities of natural gas, petroleum, coal, and other sources of energy. Total energy requirements for the future have been estimated in terms which stagger the imagination.

Scope of Future Energy Needs

IT has been estimated that total world energy consumption for the next fifty years will be four times as much as was consumed in the previous one hundred years, and almost twice as much as was used during the time from the birth of Christ to 1850.

But what of the next one hundred years? The scientists tell us that requirements for energy during the period of 1950 to 2050 will be 47 times as great as during the preceding 100-year period.

We in the United States are blessed by relatively abundant supplies of conventional fuels. Sometimes we are inclined to feel that they will never be exhausted. Yet it has been estimated that all the world's known supplies of economically recoverable fossil fuels, together with the energy that may be harnessed from solar heat and the winds, will be sufficient to supply only about 25 per cent of the world's energy requirements during the next century. It is obvious that we must develop new sources of energy if progress is not to be hindered by lack of power. At present, the energy of the atom is the most promising source from which to make up this deficiency.

I HAVE referred to the overall increase in the use of harnessed energy. In no form has the rate of increase surpassed that of the use of electricity. In 1930, for example, we produced 91 billion kilowatt-hours of electricity in the United States. By 1951 this figure had risen to 370 billion kilowatt-hours, and today it is well in excess of 600 billion kilowatt-hours per year. Electric energy requirements of 2,000 billion kilowatt-hours have been estimated for 1975. This is about three times our present requirement. Requirements for the year 2000 have been estimated at 6,000 billion kilowatt-hours, nearly ten times our present consumption.

The electric utility industry is to be commended for the job it has done in bringing about expansion of electrical capacity and making available such large quantities of energy in so useful a form. The United States now has about 150 million kilowatts of installed electrical capacity. We shall probably need between 350 to 400 million kilowatts of capacity by 1975 or 1980. The turn of the century, which is now not so far away, will undoubtedly see a need for 600 to 700 million kilowatts of capacity. It is when we think of our tremendous requirements for electricity in the future that the need for atomic power is so clearly apparent.

Competitive Atomic Power Is Vital

SO far as I know, everyone agrees that it is in our national interest to achieve economically competitive atomic power. What has been lacking in our program thus far is the sense of urgency with which the task should be approached. In my view we should marshal our resources, those of government as well as those of industry, if we are to maintain American leadership in this vital field.

I say we must maintain leadership in the art of developing atomic power. There are several reasons why this is so.

In the first place, it is manifestly to our interest to develop economically feasible power reactors, from the standpoint of our own domestic economy. It is obvious that we can use atomic power to our advantage, not as a replacement of, but as a supplement to that which is generated from other fuels. If our economy expands as it should, we may need this power sooner than some think.

Perhaps of greater significance to our own economy in terms of urgency of the problem is the question of foreign markets for reactors. Other countries where conventional fuel costs are higher will admittedly need atomic power sooner than will some parts of the United States. To that country which is first to develop reactors will go the orders for reactors and other items associated with their operation. Should American industry lose these markets to the British, or even worse to the Russians, it would have a serious dollar-and-cents impact upon those in this country who are interested in supplying those markets.

Collateral Advantages

Aside from the purely economic aspects are the political and propaganda advantages which will accrue to that nation which is first to make economically competitive atomic power a reality. The Russians are determined to outstrip us. One can be sure that if they do, this fact will be forcefully brought to the attention of those peoples who are wavering in their choice between East and West. In this sense, loss of the atomic power race will be catastrophic to the Free World.

Moreover, we have a clear moral responsibility to be the first to make this marvelous new source of energy available to improve the lot of mankind. In the eyes of the world we have been accused of placing major emphasis upon developments for atomic destruction, as indeed we have. Here we have an opportunity to dispel the Soviet propaganda that we are a nation of warmongers. We must not lose this opportunity if we expect to lead successfully the free nations of the world in the continuing struggle against Communism.

We are in an atomic power race whether we like it or not. We have entered that race because we could not do otherwise. Nothing less than a full effort offers reasonable assurance of victory, and I believe the American people will support a full effort if they are but given the facts.

¶ "SOON after the passage of the 1954 law [Atomic Energy Act] it became apparent that industry was not in a position to take any significant steps at all without some forms of government assistance. To encourage industrial participation the Atomic Energy Commission invited both private and public utilities to propose reactor construction under a program in which substantial government financial assistance was offered. I have no objection whatever to this program, and I have supported it at every opportunity. I am perfectly willing to assist nongovernmental groups in their efforts to get along with this task. I shall continue to support this program, but we need to add to it if we expect to maintain a position of leadership."

Lag in Atomic Development

OUR present program has already proven itself inadequate. In 1954, when the Atomic Energy Act was enacted, we were told that if the government would merely allow private industry to enter this field that industry would be in a position to proceed to make atomic power a reality and that this would be done much more quickly without government interference. In fact, the 1954 law undertook to eliminate this "interference" even to the extent of specifically prohibiting any subsidy in the construction of reactors.

The 1954 law has now been in effect for five years. The only reactor we have which is producing electricity in commercial quantities is the one located at Shippingport, Pennsylvania. This reactor was authorized prior to the passage of the 1954 law. It is owned by the government and built almost entirely with government funds.

It produces 60,000 kilowatts of electric energy.

Soon after the passage of the 1954 law it became apparent that industry was not in a position to take any significant steps at all without some forms of government assistance. To encourage industrial participation the Atomic Energy Commission invited both private and public utilities to propose reactor construction under a program in which substantial government financial assistance was offered. I have no objection whatever to this program, and I have supported it at every opportunity. I am perfectly willing to assist nongovernmental groups in their efforts to get along with this task. I shall continue to support this program, but we need to add to it if we expect to maintain a position of leadership.

UNDER the administration program as it has been operated, the commission has not exercised the leadership and the initiative which are required. The initiative has rested altogether with those who might volunteer to submit a proposal. The commission has limited itself to accepting or rejecting whatever proposals others might choose to make. If no one answered a commission "invitation" to build a reactor or otherwise volunteered a proposal, no steps whatever were taken to see that reactors are actually constructed.

Moreover, under the invitation program, even when a proposal is made and accepted, there has been no assurance that the reactor actually would be built. For example, as early as 1955 the Pennsylvania Power & Light Company submitted a proposal for the construction of a reactor. The commission indicated a willingness to accept the proposal and to contribute a substantial sum in the form of research and development assistance and in operating subsidies. Three years later, in December of 1958, the Pennsylvania Power & Light Company, despite assistance offered by the Baltimore Gas & Electric Company, decided that, after all, it would not follow up on this project.

I FIND no fault with the Pennsylvania Power & Light Company for its decision. Those who manage private corporations are responsible to their stockholders. Their mission is to make a profit. Any realistic appraisal of the situation indicates that, as of the present, atomic power is not economically competitive. Since there is no present prospect of profits, it is easy to understand why private utilities do not rush in to construct atomic reactors. Within the limits of the conditions they

Demonstration Reactors Should Be Built By Government

"FOR several years I have advocated an accelerated atomic power program providing for direct construction of demonstration reactors by the federal government. Under my proposal the government construction would supplement the efforts now being made under the existing program, which would be continued. The whole people acting through their government can marshal the necessary resources to meet specific goals. In my view, government can and should expend the necessary sums to advance the art and technology of atomic power to the point that private and public utilities can proceed with a reasonable expectation of economic operation. Such expenditures by government would be a sound investment for the benefit of all."

face, they have made a fine contribution. But the fact remains that our program is on dead center and we continue to lose ground both to the British and to the Russians who are approaching this task with determination and with vigor.

Progress Far Less than Predicted

IN April, 1955, the then AEC Director of Reactor Development, in a speech before the American Power Conference, made glowing statements about the commission's program. He predicted we would have about two million kilowatts of nuclear power in service by the end of 1960 and about five million kilowatts by the end of 1965. This same spokesman for the AEC, two years later, in July, 1957, although recognizing that the program was slipping, still talked of one million kilowatts of nuclear power by 1960.

Today, if we are to use the commission's current estimate, which I venture to say may turn out to be as overoptimistic as those in the past, the United States will have only 511,000 kilowatts of nuclear power capacity by mid-1960 and only 1.9 million kilowatts by mid-1965.

IN appraising this schedule it must be remembered that the commission has only recently announced the cancellation of another project (in addition to the Pennsylvania project) that had been included in the program for several years. Still another project was, within the space of a few days, indefinitely deferred and then reinstated. The Consolidated Edison group, sponsor of one of the larger projects, also recently announced that its proposed reactor under construction at Indian Point, New York, would be delayed for another year, coming into operation

in 1961 rather than in 1960, as previously forecast.

I cite these examples not to be critical of the public and private utilities now engaged in the program, but merely to reflect the uncertainties which are involved in the very limited program now under way.

Our Atomic Power Rivals

MEANWHILE, Great Britain is forging ahead. The British already have in operation about 175,000 kilowatts of capacity and as of today have under actual construction nuclear power plants to provide an additional 1,520,000 kilowatts of capacity. On the basis of their present plans, the British expect to have a total of 5 million to 6 million kilowatts to be in operation by the end of 1966.

Admittedly, we know less about Russia's program. In 1956 a Soviet scientist, I. V. Kurchatov, in an address before British scientists, outlined an ambitious program for the construction of between 2.4 million and 2.5 million kilowatts of atomic power capacity by 1960.

If we ever had any illusions about Russian capabilities, they should have been shattered by the spectacular success of the Soviets in launching earth satellites, and their more recent feat of being first to place a satellite in orbit around the sun. They are determined to outstrip us, not only for political and propaganda advantage, but also for economic and industrial advantage. Even if the Russians succeeded in doing only one-half of what Mr. Kurchatov outlined, they would be far ahead of us in terms of reactor construction. There are absolutely no grounds for complacency about Russian progress in reactor construction.

Quantity of Kilowatts Important

THERE are those who contend that there is no significance in the number of kilowatts of capacity in operation. I disagree. In this field, even more than in many others, we learn by doing. Laboratory techniques can be proven and improved upon only by trying them out. We shall not get economic atomic power until we have had experience in building and operating several generations of reactors.

On January 31, 1955, the then chairman of the Atomic Energy Commission stated as follows:

> The commission recognizes that the greatest advances in reactor technology will come from the actual construction and operation of large-scale reactors on a commercial basis. There is no effective substitute for such practical experience.

I agree emphatically with that statement. I thought everybody agreed with it—until February of this year when the present chairman of the commission said he did not subscribe to that statement. In presenting the commission's program for fiscal 1960 to the Joint Committee recently, Mr. McCone, the present chairman, indicated that the commission would continue to rely upon the same basic approach which has been followed in the past. He did recommend some changes. The amount of government financial assistance to those who volunteer to construct reactors will be increased and will include capital grants for construction of the reactor itself up to a maximum of 50 per cent of the entire cost of both the nuclear and conventional portions of the plant. Financial assistance in research and de-

velopment and operating subsidies in the form of waiver of fuel use charges will be continued as in the past. Also, the commission now states that in the event construction of a given reactor appears desirable, and if no one volunteers to build it, the commission will then undertake direct government construction.

Drawbacks of Proposed Atom Program

On the surface, this might appear to be a reasonable approach, except for the added time which will be lost in extending and evaluating responses to "invitations." However, as I have already pointed out, when a "proposal" is made and accepted, there is no assurance that the project will be completed. Despite the lack of such assurance, so long as the proposal remains active, the proposer has, in effect, staked out a claim to the particular reactor concept in question, thereby excluding direct action by the government, and, in practical effect, excluding action by anyone else. If the project is later dropped, valuable time has been lost.

Such a program, even at best, is limited by the vigor with which it is prosecuted. If those in charge of our program do not believe we need to move faster than we have been moving in the past, there is no prospect of our doing so. It is significant that the commission is requesting funds and authorization for the civilian atomic power program for the next fiscal year based on a program even more limited than that which was agreed upon last year. Obviously, we cannot expect to make up lost ground by cutting back our efforts.

More Federal Participation Needed

For several years I have advocated an accelerated atomic power program providing for direct construction of demonstration reactors by the federal government. Under my proposal the government construction would supplement the efforts now being made under the existing program, which would be continued. The whole people acting through their government can marshal the necessary resources to meet specific goals. In my view, government can and should expend the necessary sums to advance the art and technology of atomic power to the point that private and public utilities can proceed with a reasonable expectation of economic operation. Such expenditures by government would be a sound investment for the benefit of all.

Five years of experience under the present program convinces me that unless we do take vigorous action we stand to lose the atomic power race with all of the

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consequences such a defeat would entail.

In 1956 the Joint Committee on Atomic Energy reported favorably the so-called Gore-Holifield Bill to provide an accelerated program of reactor construction. This bill passed the Senate. Unfortunately, it was narrowly defeated in the House of Representatives. I have reintroduced the bill in the Senate, and I shall continue to press for its passage.

What My Bill Hopes to Accomplish

OPPOSITION to this proposal stems in large measure, I believe, from misunderstanding about its effects and from failure to appreciate the importance and urgency of its objectives. Some apparently confuse this issue with the controversy between public and private power. Actually, the question of an accelerated program has nothing to do with that controversy. The rôle of government in this instance is to demonstrate the economic feasibility of atomic power. It is a proper rôle for government. The same technical and engineering firms will build the reactors whether they are built by government, by private concerns, or by private concerns with federal financial assistance. Under my proposal reactors constructed by the government would be built at commission production sites with the power generated to be consumed by the government itself. There is no provision, expressed or implied that could properly be interpreted as leading to government monopoly of the sale of atomic power. The public power issue, as applied to this question, is nothing but a smoke screen empolyed by those who, for one reason or another, oppose an adequate program.

Simply stated, I propose that the government lead the way to advance the day by which atomic power can contribute to an expanding economy under enlightened free enterprise, with the knowledge and experience gained from construction and operation of prototype power reactors freely available to all.

IN the final analysis, this issue resolves itself into a question of whether we are willing to accept the probability of second or third place in the development of atomic power. To me the evidence is convincing that we are faced with that prospect unless we make up our minds to pursue the objective of harnessing the atom for peace with determination approaching that which we applied to the unleashing of the atom for destructive purposes. I am hopeful that the Congress, the administration, and the American people will recognize the clear requirements of our national interest.

"SOME people apparently think that the federal Treasury is a free-flowing well from which funds can be drawn in any amount for all purposes. And this fallacious notion feeds on another—that it is always the other fellow's money which will be used to pay for the things we might want."

—MAURICE H. STANS,
Director, Bureau of the Budget.

New Guide Lines for Growing Rural Utilities

By DAVID A. HAMIL*

Administrator, Rural Electrification Administration

After World War II, it was clear that farm use of electricity had been badly miscalculated. REA has raised the sights of its long-range planning from two to ten years, with more recent emphasis on the "annual plan" for individual borrowers to make flexible provision for area and transitional variations.

For a number of years now, the Rural Electrification Administration has recommended to its electric borrowers that they make system plans for the future. As the systems grew, as important changes took place in the rural scene, and as rural utilities gained experience, REA asked its borrowers to plan farther and farther ahead. At present, REA is encouraging each borrower to develop plans for a system designed to handle from three to six times its current load.

To some in the industry, a system plan that reaches so far into the future may appear to belong in the same class as crystal gazing. Admittedly, it may be many years before average consumption is multiplied six times in a number of REA-financed systems. Admittedly, important technological or social changes could turn a long-range plan into an historical curiosity overnight. Despite such considerations, REA has learned that shorter-range plans are inadequate to meet the special needs of borrower, lender, and rural consumer.

At REA, the concept of long-range planning evolved slowly. At first, borrowers planned only for the here and now. When the first "A" sections were being built in the late 1930's, practically no rural experience was available. Systems were designed to serve only existing consumers, and conductors were strung on the assumption of an average farm usage of from 40 to 75 kilowatt-hours per month. To some, even 75 kilowatt-hours per month seemed a reckless prediction. For all

*For additional personal note, see "Pages with the Editors."

anyone knew, REA borrowers were building their ultimate plant.

After World War II began, it was soon apparent that farm usage had been greatly underestimated. Farmers and other rural people were finding use for all the power they could get, and many were asking for more. With wartime material shortages, there was little that could be done about this demand except to lay plans for a more enlightened future.

With the end of the war, however, REA borrowers were faced with a task even more pressing than increasing system capacity. More than half of all U. S. farms still were without central station service in 1945, and applications for loans to extend service flooded into REA during the late forties. The emphasis was on horizontal expansion, on area growth. Many of the first system studies were made to determine the most economical means of extending service to still unserved areas.

Planning for Growth

As area coverage was gradually achieved, the emphasis shifted to vertical expansion, to the increasing consumption of electricity by each consumer. More and more, borrowers found that they needed guide lines for adding to system capacity. As one manager put it, "I'm afraid that I'm using a cold patch for repairs when I should be buying a new tube."

The first system studies recommended by REA in the postwar years were made on the basis of each utility's expected growth at the end of two, five, and ten years.

Before long, the two-year study was dropped, since such a short-range objective barely gave a borrower time to assemble his materials and to begin construction before the two years had elapsed.

The five- and ten-year studies were an infinite improvement over no advance planning at all. They offered many rural electric systems their first clear indication of where they were heading. To REA, they furnished a basis for establishing the validity of requests for loan funds.

But the background against which REA and its borrowers operate—the rural scene—was changing fast. Tens of thousands of new consumers were being added to rural lines each year, reflecting in part the move of many urban residents to the country. More nonfarm rural enterprises were appearing in rural areas. Most important, farmers were applying electricity to farm chores in hundreds of different ways. Coupled with increasing demand for electricity came demands for higher-quality service.

As a result of these changes, the rural distribution systems financed by REA were growing at a faster rate than the industry as a whole. (They still are. In 1958, sales by REA borrowers were up 10.3 per cent over 1957; sales by the industry as a whole rose only 2.1 per cent during the same period. From all indications, this growth in kilowatt-hour consumption will continue at a fast clip in the years ahead.)

At REA, loan applications reflected this growth. Of $171 million in gross loans approved by REA in 1954, about $38 million were earmarked for system improvements. In 1957, REA approved loans totaling $296 million, of which nearly $83 million were for system improvements.

Rural electric systems definitely were growing in depth.

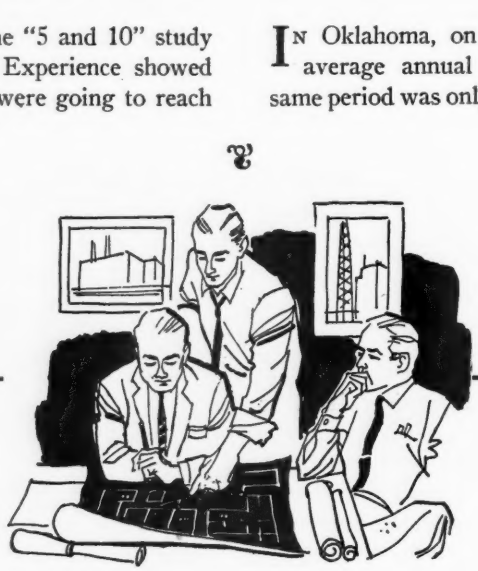
System Studies Found Imperfect

AGAINST this background of change, serious flaws began to appear in the five- and ten-year system study. For one thing, the "5 and 10" plan gave borrowers two points, but it failed to give them reliable guide lines for making improvements in the intervening years. For another, ten years was proving an unrealistic terminal. In a number of systems, it was clear that improvements made on the basis of the study of the tenth year were going to prove costly errors as far as the eleventh year was concerned.

Another flaw in the "5 and 10" study was its inflexibility. Experience showed that several systems were going to reach their ten-year objective in three or four years; other systems might not reach it for fifteen years. Taken individually, the rate of growth of REA electric borrowers was proving anything but uniform.

Even from state to state, there were variations. In North Carolina, for example, the average annual increase in farm kilowatt-hour consumption between 1948 and 1957 was a very high 15.3 per cent. During those years, the monthly kilowatt-hour usage on North Carolina farms rose from 66 to 237.

IN Oklahoma, on the other hand, the average annual increase during the same period was only 8.2 per cent, as farm



Growing Pains

"AGAINST this background of change, serious flaws began to appear in the five- and ten-year system study. For one thing, the '5 and 10' plan gave borrowers two points, but it failed to give them reliable guide lines for making improvements in the intervening years. . . . In 1957, REA recommended the long-range system plan to all its electric borrowers. It is a concept based, not on years, but on multiples of three to six times current load. It is an optimistic plan which will offer continuous guide lines for increasing system capacity for many years to come. Used in conjunction with each borrower's long-range system plan is an annual work plan."

usage rose from 87 kilowatt-hours per month to 178 per month. In Nevada, the annual rise averaged only 5.1 per cent, but Nevada began the period with 580 kilowatt-hours per month in 1948, and it ended it with 911 kilowatt-hours per month in 1957.

When individual rural electric systems were compared, there were even sharper variations. One southern co-operative, for example, is currently adding new consumers at the rate of about 2,000 a year. That is more consumers than some borrowers have added during their lifetime. Another borrower doubled its load in just one year when its farm consumers switched their principal crop from cotton to lettuce.

There is nothing surprising about these variations. They reflect differences in the size of farms, the type of farming, the proximity to cities, the level of farm income, retail rates, and a number of other factors. But the variations made it clear that system studies based on a specific number of years were too inflexible to meet the needs of REA-financed systems.

Two New Plans Proposed

In 1957, REA recommended the long-range system plan to all its electric borrowers. It is a concept based, not on years, but on multiples of three to six times current load. It is an optimistic plan which will offer continuous guide lines for increasing system capacity for many years to come.

Used in conjunction with each borrower's long-range system plan is an annual work plan. It is with this important tool that a borrower determines the amount of capital investment which will be made during the current year. This annual plan is as conservative as the long-range plan is optimistic. It is based on growth which already is taking place; it takes into consideration what the system actually is doing. In preparing each annual plan, however, the borrower's engineer is guided by the long-range plan, which enables him to make improvements at the right place in the most economical manner possible. (Normally, the same engineer, a consultant or system employee, prepares both plans.)

Advantages

Armed with these two tools—the long-range plan and the annual plan—REA-financed systems are in a position to achieve a number of important objectives. First, they can increase the capacity of their systems in an orderly fashion, making sure that plant does not become obsolete early in its service life.

Second, they can avoid premature investment in plant. Instead, rural systems can be expanded so that new investment in facilities stays in step with load growth and revenue. Also, borrowers can make good use of new developments in equipment.

Third, borrowers can correlate the various elements of their systems—power supply, transmission, and distribution—to maintain a reasonable and economical balance among them.

Finally, borrowers can make maximum use of opportunities to improve the quality of service, while keeping outages at a minimum.

Rural Outages Are Serious

The importance of this final objective cannot be overemphasized. Rural consumers demand well-regulated voltage today, and they can no longer tolerate out-

ages while portions of the systems are being revamped.

In rural areas, a consumer loses far more than his electric lights and refrigeration when the power goes off. Usually, he loses his running water, and perhaps his furnace as well. During a recent storm, one rural resident discovered that he could not even use his car to transport his family to a nearby hotel. The electronic doors on his garage would not work, either.

To an increasing number of stock, poultry, and dairy farmers, a prolonged outage can prove disastrous today. Many farmers cannot find the labor to run their enterprises without electricity. Sometimes, even the animals are at a loss. A Missouri farmer reports that his present dairy herd was brought up on milking machines. During an outage last winter, when he set about milking his herd by hand, not a single cow would permit herself to be milked by this strange, old-fashioned method.

The typical rural system financed by REA is of the radial variety, usually without interconnecting facilities, as contrasted with the usual urban system, with loop feeds and other ways of limiting outages. As a result, it takes careful planning to avoid outages while doubling or tripling the capacity of a rural system.

Plan Is Meeting Needs

After more than two years' experience with the long-range system plan, REA borrowers are finding the concept flexible enough to meet their widely varying requirements. (An estimated 400 borrowers have long-range plans in some stage of preparation at present.) If a system grows more rapidly than expected, it finds the guide lines for growth already at hand, and it can incorporate them in an annual work plan.

As far as REA is concerned, a review of each long-range plan offers the best basis yet for establishing the validity of loan needs of borrowers and for checking on loan security.

Finally, the long-range plan means to the rural consumer that he will continue to get all the electricity he needs at the lowest possible cost and with as few outages as possible. This final observation is the best reason for long-range planning on rural systems that REA can offer.

"Most government officials realize that better profit incentives would stimulate greater efficiency and faster progress in the defense program, but they fear the political reaction to false charges of 'profiteering.'

"This is unfortunate. The same profit incentives that have made America's civilian economy the most progressive in the world would equally produce faster progress and lower costs for the Defense Department, and thus for the taxpayers, if the same system of incentives and freedom to innovate and utilize the maximum management and technical strength were incorporated in this country's defense program."

—RALPH J. CORDINER,
Chairman of the board, General Electric Company.

Stockholder Relations *Versus* Responsibilities to Stockholders

Stockholder relations programs have their place. But they actually may distract management from performing competently in ways of far more value to the investor. In evaluating utility common stocks, much greater emphasis should be given to what management thinks about earnings, rate increases, the use of funds for growth, and financing.

By PAUL HALLINGBY, JR.*

A SAGACIOUS utility president once remarked that while a program proposed for his company appeared favorable per se, he would accept it only if he could be assured that it would not divert management's attention from more important programs already in being. If each utility's stockholder relations program had been put to this test before its adoption, there would be little justification for an article on this subject. But in some investment circles there is doubt as to whether this test was used—enough doubt, at least, to prompt an examination of the topic.

In recent years a large number of utility companies have adopted stockholder or investor relations programs. Others have broadened programs of this type that already were in existence. These programs usually include activities ranging from more complete and attractive annual and interim reports to shareholders to fre-

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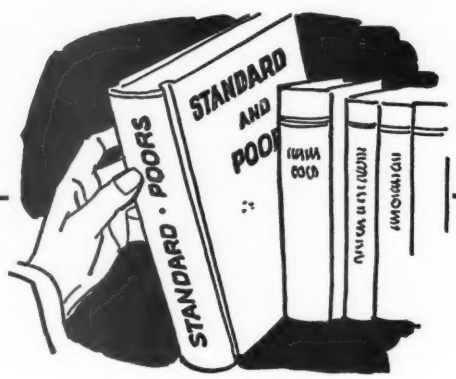


quent meetings with analysts' societies and other groups of professional investment men in the major financial centers of the country. In many cases, utilities supplement their regular annual stockholders' meeting with regional meetings of stockholders that are held in other cities or in service areas in the case of holding companies.

ACTIVITIES such as these are indeed commendable and serve a decidedly useful purpose. Among the most important benefits of such programs is that they serve to convince investors that management of a given company is willing to expose itself to its stockholders and answer with rather complete frankness whatever questions may be on the minds of the owners of the enterprise. This sort of thing cannot help but strengthen investor confidence in utilities and the integrity of their managements. Countless stories can be told illustrating the typical unsophisticated stockholder's reaction to seeing with his own eyes that the president of "his utility company" is a reasonably normal human being who, contrary to what some opponents of the philosophy of investor ownership of utilities would have one believe, does not have horns protruding from his head.

Is a Stockholder Investor Program Enough?

HELPFUL and beneficial as stockholder and investor relations programs are, however, the apparent preoccupation of some utility managements with them raises an important question: *Does the fact that a management carries on a comprehensive stockholder relations program tend to cause that management to feel satisfied that it is being sufficiently thoughtful of the owners of its business, and let it go at that?* Putting the question another way (which admittedly is also oversimplified), is such a management inclined to substitute its rather grandiose stockholder relations program for a concerted and continuing effort to discharge its more fundamental obligations to stockholders? The answers to these questions hinge in part on one's views as to management's "fundamental obligations to stockholders."

THE popular view among professional investors goes something like this: Virtually every utility in the country is growing in point of energy sales, revenues, plant account, and net income, but such growth literally is of no value to stockholders unless, to some extent, it can be translated into higher earnings per share (adjusting, of course, for stock dividends, split-ups, valuable rights, etc.). The reason for this is that by far the most important factor affecting the market price of a utility stock is earnings per share. From this it follows that management's obligation to stockholders is to do everything humanly possible to translate company growth into rising earnings per share.

In recent years more and more utilities have succeeded in converting a reasonable portion of the growth of their business into rising earnings per share. In fact, a number of utilities have been showing rather sharp earnings uptrends, with the result that the market now evaluates their earnings per share at relatively high multiples. The stocks of such companies now are regarded popularly as growth stocks in the market place. While utilities that fall into this classification generally serve

territories that are among the fastest growing in the country, a good many companies whose territorial growth is only mediocre nevertheless are able to show reasonable growth in earnings per share.

Management's Attitude Big Earnings Factor

IN attempting to ascertain what the future trend of earnings per share of a given utility is likely to be in the foreseeable future, the utility analyst generally considers three fundamental factors; *viz.*, rate of territorial growth, nature of regulation, and management attitudes. The matters of rate of territorial growth and the importance of understanding the nature of applicable regulation need no explanation here. In connection with the latter factor, however, perhaps it should be mentioned that regulation does not have to get better (more liberal) in order that earnings per share move upward adequately. The principal requisite is that regulation, in point of rate of return on a stipulated rate base, does not get worse or deteriorate.

When the utilities with the sharpest uptrends in per share earnings are examined, it is found that in each case all three fundamental considerations—territorial growth, regulation, and management attitudes—are favorable. If any one of these basic factors is not fully favorable, then the trend of per share earnings will tend to be something less than the best in the industry.

It is noteworthy, however, that in cases where the rate of service area growth, or sometimes even the nature of regulation, is relatively mediocre, a fairly healthy trend of per share earnings can be developed if the management factor is decidedly favorable. In short, the management factor is a very important key to the equation.

IN assessing the management of a utility, analysts and investors often ask the question: Is it stockholder minded? Although the uninitiated utility executive might think this question refers to the breadth and scope of the stockholder or investor relations program of the company, it actually bears no relationship to such activities. The real purpose of the question is to find out who management is working for first and foremost—its security holders or some other group.

In a hair-down session with a group of utility officers not long ago, the president of an investment company made a statement, which, though it shocked more than a few in the audience, bears repeating

¶ "IT goes without saying that winning rate cases is much easier said than done; there are always a great many factors that influence a management's many decisions with respect to the timing and preparation of a rate case. Most professional investors have sufficient insight into the utility business to understand such factors. Their principal area of concern, however, relates to management's basic **attitude** toward the problem of seeking rate relief. Is it trying to find a sound way to proceed with the admittedly unpleasant chore of seeking rate relief and getting the job done, or is it more inclined to occupy itself with the consideration of reasons why it should **not** proceed?"

here. "The principal objective of any utility company," he said, "is to make money for its owners—the stockholders." When asked of service to customers, he replied, "Surely, service—good service—to customers is very important, not as an *end* in itself, though, but as a *means* to the end of making money for stockholders, or those who supplied the risk or equity capital on which to found and continue the business."

Two Vital Areas of Management Policy

THERE are two broad areas of management policy and discretion which bear heavily on the amount of money made for stockholders, and the trend of earnings per share. The first has to do with the rate of return earned on whatever rate base is stipulated by the regulatory body having jurisdiction. The second relates to the means of financing expansion and dividend policy.

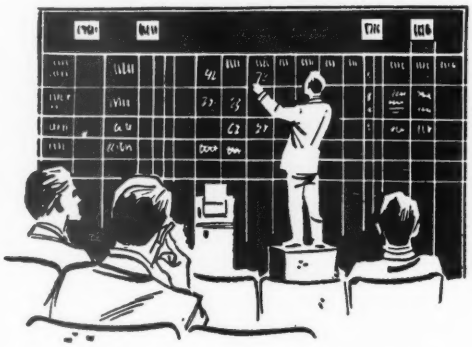
The matter of earning a full rate of return on allowable rate base is divisible into two parts—what can be done from within and what must be accomplished through seeking permission to invoke higher rates. Generally speaking, there is considerable difference between the amount by which a utility could add to a given rate of return through use of each of these measures. This is illustrated by the answer a utility president gave to a question as to how much his company, then earning about 6 per cent on its capitalization, might be allowed to earn and keep.

His reply was that if somehow, somewhere he could find the means to reduce costs and expenses to the extent that the rate of return would increase to 7 per cent, he felt sure the commission would not object to the company earning such a figure.

If, on the other hand, he were to make application for higher rates in order to increase the rate of return, he felt equally sure that the commission would turn him down flat.

THIS realistic size-up of the situation exemplifies the importance of making every effort to keep expenses and costs (including those that go into the rate base) as low as possible in order to keep the rate of return up. The various means of doing so in the utility business—particularly for electric utilities—are well-known and need no comment here, with possibly one exception; *i.e.*, the matter of reserve generating capacity. It is a known fact of utility life that, other things being equal, it is more difficult to earn a full rate of return with, say, a 30 per cent margin of reserve generating capacity than with a lower margin; *e.g.*, 10 per cent. Admittedly, of course, other things are not always equal, particularly when there exists a formal power pool arrangement under which a utility long on reserve capacity is compensated for it by neighboring utilities that make use of it.

Some utilities are considered by discerning analysts to be overly cautious when it comes to maintaining large reserve generating margins year in and year out, even though they have interconnections with adjacent companies over which large blocks of power may be transmitted if need be. The building and carrying of large amounts of reserve capacity, without compensating financial arrangements with neighboring utilities, can have only one effect on rate of return—to hold it down.



A Sensible Common Equity Ratio Should Be Adhered to

". . . the ideal management objective is to finance the utility's growth through sale of as few additional shares of common stock as is possible, without reducing the financial strength of the company. . . . perhaps the simplest way to carry out a large expansion program without selling additional common shares is to obtain all required outside capital through sale of debt and other fixed-income securities. Some investment specialists advocate this technique, which has the obvious disadvantage of lowering the common equity ratio (as a percentage of total capitalization) and thereby weakening the financial strength of the business. . . . A more sensible approach would seem to be for each utility to choose a common equity ratio, or a narrow range thereof, that makes sense for its particular situation and then **stick to it.**"

Rate Relief Presents Problems

THE problem of determining when rate relief is needed to bolster a sagging rate of return, how much to seek, how to present a rate case, and so on, is one of the most difficult in the utility business. As a result, there are virtually as many management approaches to this problem as there are utility managements. In the opinion of the typical analyst, the ideal management philosophy on this subject goes something like this: *Management's obligation to the owners of the enterprise is to do everything humanly possible to earn all the end-result income dollars that can be earned and kept within the framework of applicable regulation.*

It goes without saying that winning rate cases is much easier said than done; there are always a great many factors that influence a management's many decisions with respect to the timing and preparation of a rate case. Most professional investors have sufficient insight into the utility business to understand such factors. Their principal area of concern, however, relates to management's basic *attitude* toward the problem of seeking rate relief. Is it trying to find a sound way to proceed with the admittedly unpleasant chore of seeking rate relief and getting the job done, or is it more inclined to occupy itself with the consideration of reasons why it should *not* proceed?

Contrasting Management Attitudes

A LARGE company on the eastern seaboard received rather broad, though informal, acclaim from utility analysts for its recent success in a rate case. The case for higher rates was based in small part on the damage rising expenses already had done to rate of return, and in large part on what additional damage would be done if expenses increased further, as future projections indicated they would.

A contrasting management attitude is exemplified by a western company that was allowed a 6 per cent rate of return under a commission order three or four years ago. Not long ago its management told a group of investors that, largely because of rising expenses, the return had declined to 5.8 per cent in 1957, 5.65 per cent in 1958, and would be about 5.5 per cent in 1959 and less in 1960 if present forecasts of the trend of expenses materialize.

When asked what it intended to do about the declining rate of return, the president replied that he and his associates would continue to study the situation, with a view toward seeking rate relief when it appeared that the company had an "ironclad" case.

In admittedly oversimplified terms, the eastern company had the *will* to obtain the rate relief to which it believed its stockholders were entitled, and found the *way* to obtain it through a skillfully prepared and prosecuted rate case. In the case of the western company, the will to take positive action then and there seemed lacking, and there the matter rested.

Financing and Dividend Policies

THE other basic area of management discretion that has such an important bearing on the trend of earnings per share of a utility—the real measure of growth from the investor's standpoint—pertains to financing and dividend policies. Stated simply, the ideal management objective is to finance the utility's growth through sale of as few additional shares of common stock as is possible, without reducing the financial strength of the company. This latter qualification is indeed important, for perhaps the simplest way to carry out a large expansion program without selling additional common shares is to obtain all required outside capital through sale of debt and other fixed-income securities. Some investment specialists advocate this technique, which has the obvious disadvantage of lowering the common equity ratio (as a percentage of total capitalization) and thereby weakening the financial strength of the business. Moreover, the matter of financing on a basis which results in a lower common equity ratio is something that can only go so far before even the most speculatively minded management must call a halt.

A more sensible approach would seem to be for each utility to choose a common equity ratio, or a narrow range thereof, that makes sense for its particular situation and then *stick to it*. A company does not have to "trade on the equity," to use a schoolbook term, to develop an adequate trend of per share earnings. Contrarywise, however, if a management suddenly gets self-conscious about its bond ratings and sells common stock for the purpose of lowering its debt ratio and, of course, raising its equity ratio, it is the stockholder who suffers by reason of the unavoidably adverse effect of this maneuver on the trend of earnings per share.

Ways to Increase Earnings Per Share

COUNTLESS articles have been written on the subject of what it takes for a growing utility company to increase earnings per share when certain factors—*viz.*, rate of return, capitalization ratios, and cost of senior money—remain constant. These articles invariably point out the basic avenues of retaining earnings in the business and selling new common stock at prices above the book value per share. Each of these approaches has the favorable effect of adding what is loosely referred to as "free" equity capital to the business and thereby increasing the book value per share of common stock. There are other ways of generating "free" capital, through such things as storm damage reserves or reserves on restricted surplus arising from use of rapid depreciation, but these will not be dealt with here.

Some companies pay a rather high percentage of earnings in the form of dividends, thereby deliberately sacrificing the first avenue to higher earnings per share referred to above. This sometimes is done in the hope that the high pay-out will cause the stock to sell at a higher multiple of earnings, and therefore a higher price in relation to book value, than would be the case with a low pay-out. Other companies choose to pay out a rather low percentage of earnings in dividends, thereby utilizing the avenue of building up book value per common share, and increasing the amount which may be earned on each share, by retaining a liberal portion of earnings. In cases where the size of the dividend a utility pays on its common stock is a highly influential market factor, the low pay-out tends to hold down the price of stock and thereby limit the premium of market price over book value. But in cases where the dividend has a relatively small effect on the market price of a given utility stock, a low pay-out need not hinder the premium at which the stock sells over its book value.

THIS raises the question as to when the dividend rate of a utility has an important influence on the market price of its stock and when it has not. Not many years ago the size of the dividend was a major market influence with respect to virtually every utility common stock. Today, however, as was pointed out earlier, the market recognizes a few issues as out-and-out growth stocks, usable in portfolios where capital appreciation is the prime objective and income is decidedly secondary.

These, of course, are the stocks with the sharpest rates of growth in earnings per share and those which consequently sell at the highest price-earnings ratios. And

¶ "THIS realistic size-up of the situation exemplifies the importance of making every effort to keep expenses and costs (including those that go into the rate base) as low as possible in order to keep the rate of return up. The various means of doing so in the utility business—particularly for electric utilities—are well-known and need no comment here, with possibly one exception; **i.e.**, the matter of reserve generating capacity. It is a known fact of utility life that, other things being equal, it is more difficult to earn a full rate of return with, say, a 30 per cent margin of reserve generating capacity than with a lower margin; **e.g.**, 10 per cent."

they generally achieve their favorable uptrends in share earnings by continuing to earn a "full" rate of return on their growing investments in property, by plowing a liberal percentage of earnings back into the business, and by maintaining the desired common equity ratio without selling any more new common shares than is absolutely necessary.

In short, when a utility establishes an uptrend in share earnings that is well above average, the market will recognize this by evaluating its satisfactory earnings at a relatively high multiple. The stock then should sell at an especially favorable price with respect to its book value, even though the dividend pay-out may be low. This enables a company in the already fortunate position of having good, rising earnings to take advantage of the benefits of selling common stock, when necessary, at a relatively generous premium over book. Through this process the trend of per share earnings receives a further stimulus.

Generally speaking, the problems of utility companies may be divided into two classifications; *viz.*, those over which management has some degree of control and those over which it has virtually none. While it would be difficult to determine which group is more extensive, there is no doubt that the former category is of sufficient import to justify the great emphasis which investors are inclined to place on the management factor in evaluating utility common stocks. And problems of this general nature are not solved to any appreciable extent through stockholder or investor relations programs, but only by management's meeting them head-on in a courageous, positive manner.

"WHEN David E. Lilienthal retired as chairman of the Atomic Energy Commission in 1950, after four years in that post, he made a most significant statement.

"He called for the removal of the heavy hand of government monopoly from this revolutionary form of human service. He advocated putting it 'back on the American track' on which the motive power would be 'the great prizes of satisfaction, prestige, and profit that have always spurred men on in every other new chapter in American industrial history.'

"This considered statement by a man who not only had guided the development of atomic power for four years but had for many years before that been dominant in the great government operations of the TVA was nothing less than the judgment of the principle that in any industrial field the ultimately dominating agency of progress and service should be private.

"Government may and should provide some research and, sparingly, financial assistance when an enterprise is new. But the aim always should be to move government out and permit the law of the free market to determine the future. For government in business inevitably freezes what it controls into routine, stagnation, and scarcity of production."

—RAYMOND MOLEY,
Columnist.

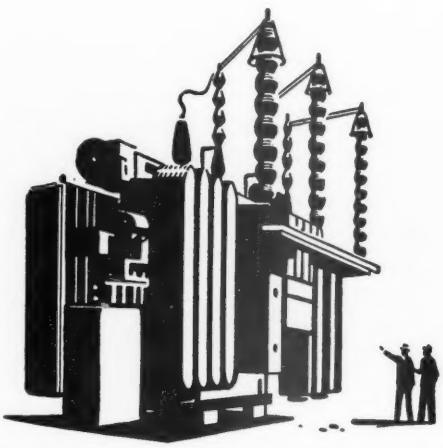
Technical Economies In Belgium's Electrical Operations

By J. F. VAN RYSSELBERGE*

Private Belgian industry has been eminently successful in keeping the price of electricity down to a minimum. This has been achieved through progressive stages of pooling and co-ordinating power between regions and companies. Thus it appears there is scant likelihood in the foreseeable future for the nation to attempt to regulate or nationalize its electric power industry.

BELGIUM believes that it is one of the countries where, in 1911, was attempted one of the first interconnections of distant power stations. They were stations owned by the same large industrial concern: the Ougree Steelworks, located around Liege. Industries, such as the Ougree Steelworks, owning their own generating facilities, are referred to, in Belgium, as "autoproducers."

*Consulting engineer, Chicago, Illinois. For additional personal note, see "Pages with the Editors."



In 1913, plans for interconnection of the Ougree power plants with power plants of other autoproducers in the Liege region were formulated.

After the first World War, in 1919, these 1913 plans were carried out, integrating the power plants of six coal mines and steelworks of the Liege region. Principles of appropriate pricing for transactions between such interconnected plants were formulated at that time. This regional interconnection around Liege was thereafter expanded and other regional groupings were formed among power plants of other steel producers, coal mines, chemical and glassworks, etc. The regional groupings of such industrial power plants have progressively been incorporated in corresponding "Unions de Centrales." These corporations were initially owned by the industries in each grouping and they are still controlled by these industries despite private capital having been provided since by outsiders.

Expansion of Regional Groupings

STARTING in 1932, the four initial regional groupings were then intercon-

nected among themselves, through appropriate transmission ties. This was possible because of the dense industrialization of the country. Thus a fifth grouping was formed, interconnecting four initial regional groups. Relatively large savings in fixed charges and operating expenses thus started to accrue to Belgian industries, at a rather early date, in addition to the savings resulting from lower-cost generation often available as a by-product of industrial processes.

As a result, in most cases, the large industries in Belgium pay for power received from autoproducers, a lower price than for power received from the Belgian private utility companies, referred to in Belgium as "producers-distributors."

In 1937, 36 producers-distributors, in the hands of eight holding companies, joined five groups of autoproducers[1] in forming the CPTE, a company for the "Co-ordination of the Production and Transmission of Electric Energy," the aims of which were complete pooling of the country's facilities with the aim of reducing power costs over the entire country. Some of the eight groups of producers-distributors appear to have been slow in putting into effect the spirit of 1937 in regard to internal pooling within the groups.

Utility Regulation Considered

TOWARDS 1954, there were talks and intended legislation toward direct government regulation of the utilities. Also suggestions and a report of some prominence toward nationalization of the utility companies in Belgium, as an avenue toward securing for the nation, in time, the benefits of much lower electric rates. Fortunately, Belgian common sense prevailed and it was recognized by labor unions and by the government, that private initiative should be given a further chance before resorting to regulation or to drastic nationalization.

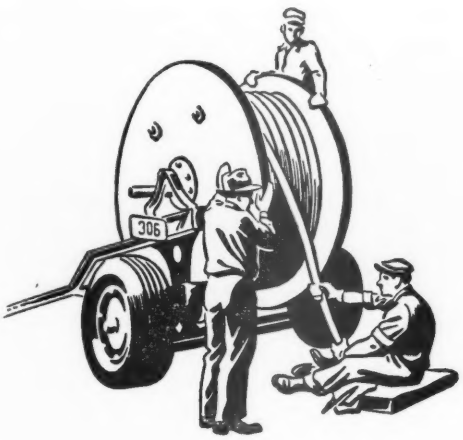
As a result, in July, 1955, all the 36 producers-distributors mentioned above, plus the labor unions and the Federation of Belgian Industries, signed a 10-year agreement whereby the participating companies (with outsiders looking in, such as various government departments) make it mandatory to co-ordinate their investments, to standardize their accounting practices, their equipment and voltages, and to standardize low- and high-voltage rates.

A major feature of this agreement is the vast powers given to the "Management Committee," set up to implement the provisions of the agreement, in respect to the all-important matter of investment programs in generating and transmission facilities, in deciding who will own and operate what facilities. It is also provided that a producer-distributor that can prove a program of rate standardization will reduce its rates and be harmful to its earning position, despite its efforts to reduce overheads and other costs, is entitled to compensations out of a fund built up for that purpose by the producers-distributors.

JOINT ownership of generating and transmission facilities has been resorted to in Belgium for some time; in instances, new stations have been built jointly by the producers-distributors and the autoproducers. Since the 1955 agreement joint ownership has spread further

[1]An additional grouping among power plants of coal mines in the Campine basin was formed in 1953.

Benefits of Increased Use of Pooling . . .



"THROUGH co-ordinated overall planning, Belgium derives the usual benefits from reduced reserves, larger units with lower per kilowatt investment, lower operating costs and higher efficiency; through co-ordination of operations within each holding company, within each 'Union de Centrales,' and then through overall co-ordination of operations through the CPTE with corresponding local dispatchers as needed, Belgium co-ordinates 98 per cent of the total country generation and reaches daily fuel savings that are close to the maximum theoretically possible."

and some plants, for example, are built at the mouth of coal mines jointly by the mines (autoproducers) and by producers-distributors.

None of the autoproducers and municipal systems have joined in the July, 1955, agreement; they have their own agreements and committees toward co-ordination of their own operations, such as the "Permanent Committee for the Co-ordination of Autoproducers," the "Committee for the Co-ordination of Operations in the Large Municipalities," "Interpublic," etc. However, all the planning activities of the various committees just mentioned, and of the "Managing Committee" of the producers-distributors, for five and ten years ahead, are in turn co-ordinated by an "Electric Equipment Committee" for the whole country. The CPTE, formed in 1937, has expanded its activities since the 1955 agreement and now co-ordinates the operation of practically all the country's facilities at the highest level.

Benefits of Power Co-ordination

ONE of the major tangible results of the overall co-ordination in the planning of generating facilities for the entire country is shown by the fact that the size units to be installed in strategic locations in the years to 1962, anywhere in the country, are all of the 100/125-megawatt size, with pretty well standardized pressures and temperatures, while the latest units to start operation in 1957 had varied in sizes from 40 to 65 megawatts. Studies by the various committees have shown that units of 250 megawatts will be justified in the near future.

In regard to interconnecting transmission lines, producers-distributors and autoproducers co-ordinate their efforts through "Gecoli," a recently formed company erecting and maintaining transmission lines and substations, in turn advised by "Secoli," a technical advising committee. To existing ties at 150 kilovolts from north to south and east to west, will be

added a 150-kilovolt loop around the country. Ties at 150 kilovolts and 220 kilovolts connect Belgium to neighboring countries, and 380-kilovolt ties are under study.

As a by-product of these important decisions in regard to the integration of the country's electric activities, some producers-distributors have merged since 1955 and others have ceased their generating activities, reducing from 36 to 32 the present number of producers-distributors, and in the meantime, through mergers, the six groupings of autoproducers that existed since 1953 are down to four groupings.

Block rates to residential consumers and rates for loads up to 1,000 kilowatts have already been standardized, conforming to the 1955 agreement. Room-count rates have been done away with.

We can sum up in this way the essential benefits secured today through progressively wider application of pooling principles: Through co-ordinated overall planning, Belgium derives the usual benefits from reduced reserves, larger units with lower per kilowatt investment, lower operating costs and higher efficiency; through co-ordination of operations within each holding company, within each "Union de Centrales," and then through overall co-ordination of operations through the CPTE with corresponding local dispatchers as needed, Belgium co-ordinates 98 per cent of the total country generation and reaches daily fuel savings that are close to the maximum theoretically possible.

Fifty Electric Companies Co-operate

To reach these results means that Belgium secures, in the planning and operation of the country's electric facilities, the co-operation of over 50 different utility and industrial companies owning generating and transmission facilities.

		At December 31, 1957
Installed Capacity		3,899,000 Kw
% Owned by Producers-Distributors		56.0
% Owned by Autoproducers		38.5 (1)
% Owned by Local Governments (Mostly Municipalities)		5.5
Net Peak		3,143,000 Kw
Generation for the Year		12,611,000,000 Kwh
% Generated by Producers-Distributors		52.8%
% Generated by Autoproducers		43.7
% Generated by Municipalities		3.5
Overall Load Factor		46 %
Number of Meters		3,000,000
Average Price Paid at Distribution Voltage to the Producers-Distributors:	2.95 francs	5.9¢/Kwh
Average Price Paid for Domestic Usages:	2.40 francs	4.8¢/Kwh (2)
Average Price Paid for Small- and Medium-size Industries:	1.03 francs	2.06¢/Kwh

(1) Corresponding proportion for the U.S.A.: 12.5 per cent.

(2) While this price of 4.8 cents is relatively high, it is nevertheless 19 per cent lower than at the end of 1950.

The price of electricity to the consumer is relatively high in Belgium due to thermal generation with high-price coal, with small- to medium-size units, extensive use of costly underground distribution, low residential and commercial consumption per customer, and low overall system load factor.

This is quite a feat, because it is well known that the human element is the key to getting parties to any interconnection to work in relative harmony.

In May, 1951, things went one step further, on to the international plan when the UCPTE ("Union for the Co-ordination and Transmission of Electric Energy") was formed, tending, under the stimulus of the Organization for European Economic Co-operation (see *Electrical World* of June 16, 1958) to foster interconnections and interchanges among countries.

Under the UCPTE, the interchanges among nations are not too great as yet, but have been important in relieving emergency conditions in some countries.

From the looks of the progress realized to date, it appears safe to predict that there will be no need for quite some time, directly to regulate or to nationalize the electric industry in Belgium, in order to achieve the ultimate goal of lowering the price of electricity to a minimum. This has been possible, thanks to a program of pooling, relentlessly carried out by private enterprise, at times with some prodding, but with the moral support of the government, in a general co-ordination of all efforts.

Some general statistics and information on Belgium's utility situation are shown in the table on page 544.

EEI 1959 CONVENTION TIMETABLE, NEW ORLEANS, LOUISIANA

Sunday, April 5th

1:00 p.m.	Registration, lobbies, Jung and Roosevelt hotels (till 6 p.m.).

Monday, April 6th

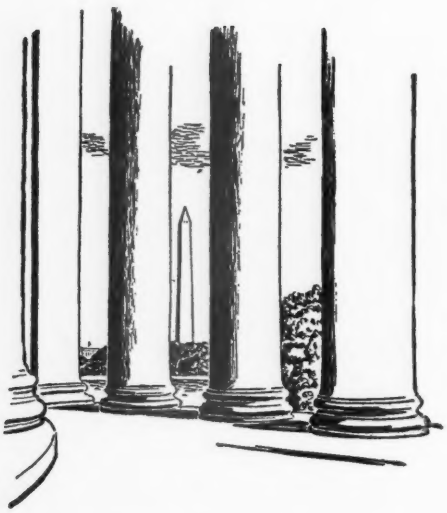
8:30 a.m.	Registration, lobbies, Jung and Roosevelt hotels (till 12 noon).
12:00 noon	Registration, entrance of International Room, Roosevelt Hotel (till 5 p.m.).
2:30 p.m.	First General Session, International Room, Roosevelt Hotel.
5:00 p.m.	President's Reception, Tulane Room, Jung Hotel (till 7 p.m.).

Tuesday, April 7th

8:30 a.m.	Registration, entrance of International Room, Roosevelt Hotel (till 5 p.m.).
9:30 a.m.	Second General Session, International Room, Roosevelt Hotel.
12:00 noon	Ladies' luncheon and fashion show, Tulane Room, Jung Hotel, immediately followed by a sight-seeing cruise on Mississippi steamboat, *President*.
2:30 p.m.	Third General Session, International Room, Roosevelt Hotel.

Wednesday, April 8th

8:30 a.m.	Registration, entrance of International Room, Roosevelt Hotel (till 3 p.m.).
9:30 a.m.	Fourth General Session, International Room, Roosevelt Hotel.
2:30 p.m.	Fifth General Session, International Room, Roosevelt Hotel.
8:30 p.m.	Special entertainment through courtesy of General Electric Company, New Orleans Municipal Auditorium.



Washington and the Utilities

TVA Bond Financing Bill

THE Davis Bill (HR 3460) to permit the Tennessee Valley Authority to finance its own power plant expansion was cleared on March 17th by the House Public Works Committee. This bill is sponsored by Representative Davis (Democrat, Tennessee), but it was modified to some extent before being approved. It would allow TVA to issue $750 million in revenue bonds. But it was amended so as to prohibit TVA from expanding its market area.

Another attempt to limit the bill by imposing Budget Bureau controls, as sought by the administration, was rejected by the committee. The market area limitation, spelled out in the measure, would forbid TVA to expand beyond its service field as of its operations July 1, 1957, with the exception of three small towns in Kentucky, two in Georgia, and one in Tennessee.

The White House is still insisting that the bill contain some budgetary controls instead of leaving the self-financing feature to be exercised entirely at the discretion of TVA. But whether President Eisenhower feels strongly enough about this to veto the measure will not be known until after the Senate has acted upon it. It is possible that the Senate may modify the bill more to the taste of the White House. A favorable vote is expected in the House as soon as the measure reaches the floor, but there was still some opposition in the House Rules Committee, which bottled up a similar bill last session. Speaker Rayburn has promised action on the bill if it gets out of committee soon enough. The sentiment for the bill is likewise shared by a substantial majority in the Senate, although some changes might still be in order.

THE area limitation was put into the measure by the House Public Works Committee only after southern Congressmen from outside the present TVA scope of operations threatened to join Republican opposition against unlimited expansion. It was likewise felt by supporters of the bill that such a geographical limitation would also lessen the chances of White House veto. The southern Congressmen were doubtless moved by the fears expressed by electric utility company execu-

tives in southern states adjacent to TVA that further expansion of TVA operations would threaten the existence of their tax-paying private company operations.

If the White House does veto the bill in the form reported by the House committee, and if it is not changed by the Senate, it is believed that there is enough combined Republican and southern Democratic opposition to block any overriding vote. The action of the House committee on the revenue bond bill was preceded by a two-day hearing before the House Public Works Committee. During these hearings the proponents made some admissions and the opponents made some strong points which could slow down progress before the bill is finally enacted.

Thus, G. O. Wessenauer, TVA power manager, asserted that even if the bill were passed, TVA would have to come back to Congress again in five to seven years for an increase in the authorization. He further conceded that, despite the bill's so-called geographical limitation, TVA's service area would be expanded from the present 80,000 square miles to over 105,000 square miles. This is why, Wessenauer said, TVA needs private investment as well as taxpayers' money to take care of its demand for service, which is increasing at the rate of 10 to 12 per cent a year. He estimated the annual required increase in plant investment at $180 million a year.

OPPONENTS of the measure included power company executives whose service area would be infiltrated by TVA: Harllee Branch, Jr., The Southern Company; L. V. Sutton, Carolina Power & Light Company; R. B. Wilson, Mississippi Power & Light Company; Donald C. Cook, American Electric Power Company; R. M. Watt, Kentucky Utilities Company; and R. E. Ritchie, Arkansas Power & Light Company. The gist of their testimony was that the so-called "revenue bond," while technically not an obligation of the Treasury, would actually be a moral commitment of the United States and be so regarded by investors. The point was also made that the so-called geographical limitation was a misnomer in that it would actually authorize TVA expansion to an indeterminate extent.

A further point was made that the release of the TVA board from congressional control under this bill is unparalleled in precedent of federal history. It would not only make TVA undisputed master of its pocketbook and policy, but there would be no forum for complaint or petition against specific acts of the TVA, such as is now provided before congressional committees. The TVA could henceforth operate without restraint other than the tenure of board members.

REPRESENTATIVE Vinson (Democrat, Georgia) called on TVA supporters to carry out in good faith a "gentleman's agreement" to keep TVA within its present boundaries by amending the bill to spell out such a service area limitation. Representative Van Zandt (Republican, Pennsylvania) said the bill would "unleash a bureaucratic bulldozer that has all the capabilities—emanating from federal fiscal favoritism—of overrunning private electric power interests." He pleaded on behalf of Pennsylvania business interests, which included electrical manufacturing. From the same area came an unexpected hint of opposition to the bill, on the part of labor representation in districts where domestic electrical manufacturing concerns are under pressure of foreign competition recently spotlighted by TVA purchase of foreign equipment. Early in March Representative Dent (Democrat, Pennsylvania) introduced a House resolu-

tion calling on TVA to stop its foreign buying of equipment, pending a review.

In another legislative move Representative Miller (Republican, New York) has introduced a bill in the House to cancel the contract entered into by TVA with the C. A. Parsons Company of Newcastle, England.

Tristate Power Hookup

PERSONS representing governors of California, Oregon, and Washington at a recent meeting in Salem, Oregon, agreed to urge their respective governors to appoint a committee to study the possibility of a three-state power combination. Asserting that past studies indicate such a power line-up would be an economic way to exchange surplus power, the delegates recommended that each governor appoint three members of a joint co-ordinating body, to be known as the Pacific Coast Governors Power Committee, to study the matter. Under the plan, the three states probably would hire a consulting firm to make the study.

Governor Hatfield of Oregon warned that the question must be kept out of the public *versus* private power fight. Governor Hatfield, who called the meeting, said the plan would be mutually beneficial to all the states. A Seattle consulting engineer, Sol Schultz, told the delegates that previous studies have indicated the arrangement would be beneficial. He said, however, that they have been too conservative with respect to the benefits that would be derived. The delegates stressed that the line-up would involve only surplus power and would not mean an extension of the Bonneville Power Administration into California. Earl Coe, Washington state director of conservation, joined the California and Oregon delegates in proposing the study, but asserted it should be assumed by the federal government at a later stage.

Restrictions on Oil Imports

THE voluntary oil import control program (in effect since July, 1957) has been replaced by a presidential order which requires the specific approval of the Interior Department's Oil Import Administration for all shipments of crude or unfinished oil imported into the United States, Puerto Rico, and Hawaii. On April 1st these same controls would become applicable to finished products and residual fuel oils. In the near future the "approval" system will be replaced by the licensing of importers for the importation of petroleum products to specific ports of entry. Violation of the program is a crime and the Administrator, after appropriate hearings, may revoke or suspend licenses on the grounds of national security. The hearing board will consist of representatives from the Interior, Commerce, and Defense departments.

The government contends that the restrictions have been imposed in the interest of national security. Canada, which exports huge quantities of oil to the United States, was quick to lodge protests against the restrictions. In Washington, D. C., Congressman Conte (Republican, Massachusetts) charged that the program will act as a detriment to our national security in that it alienates such good friends as Canada and Venezuela. Congressman Dingell (Democrat, Michigan) denounced the presidential order, stating that "it will result in increased prices for natural gas, oil, gasoline, and other petroleum products within a month."

Methane gas in liquid form was recently shipped from Texas oil fields

across the Atlantic to London, England, where it is now being piped to consumers, according to the British Gas Council. There is talk of the British government backing construction of a fleet of methane tankers which could supply Britain with cheaper gas than that produced by British coal. If this method of shipping becomes widespread, it might open a new export channel for Venezuela and other gas-oil producing countries. Whether quota or tariff restrictions against the import of cheap foreign petroleum products will block any chance of such "frozen gas" reaching American coastal cities, as reserve fuel supplies, does not seem to be a pressing question, in view of adequate existing domestic natural gas supply to all areas of the United States.

Gas Problems Aired at Bar Meeting

To the surprise of many, Representative Harris (Democrat, Arkansas) voluntarily announced that his own bill to exempt natural gas producers from the full control of the Federal Power Commission is probably dead for the session. Harris, chairman of the House Interstate and Foreign Commerce Committee, was believed to have ample support within that group to bring out his latest bill for an amendment to the Natural Gas Act along lines which have twice been vetoed at the White House. But evidently he is not even going to try to get the bill out of committee at this session.

Harris picked, as a setting for his announcement, a special conference on natural gas and oil problems, sponsored in Washington, D. C., by the Federal Bar Association and the Bureau of Public Affairs. Harris told the gas and oil attorneys that he has no plans to hold hearings and does not expect to do so. He referred to the lack of enthusiasm within the industry itself, as well as within the administration. He still professes a belief in the need for such legislation. But he said that the problem of the gas producers would have to become more apparent to everyone before sufficient support could be rallied. It is a situation, he said, that "apparently must get worse before it can be made better."

THREE members of the FPC also addressed the Federal Bar conference on gas and oil problems. Chairman Kuykendall seemed rather doubtful about regulatory progress on the backlog of gas producers' rate cases which are piling up before the commission much faster than they can be disposed of under present conditions. He intimated that the commission cannot do a satisfactory job in regulating producer rates as long as it is required to use the conventional rate base approach. But he made mention of the recent decision of the fifth U. S. circuit court of appeals in the Forest Oil Corporation case which holds that the FPC does not necessarily have to use a rate base.

FPC Commissioner Kline covered regulatory procedure. He is in favor of giving hearing examiners more leeway in running their hearings and making greater use of prehearing conferences. FPC Commissioner Connole spoke on the possibility of eventual extension of federal regulation over the interstate sale and transportation of liquefied gas, including problems of import and export.

J. David Mann, Jr., chairman of a bar committee on commission rules of practice, urged more co-operation by the practicing bar and its clients in expediting procedure under new rules to encourage prehearing agreements and stipulations.

Telephone and Telegraph

Phone Company Wins Tax Test

THE California supreme court has ruled that the Pacific Telephone & Telegraph Company needs only its state franchise to operate in various cities of the state. As a result, San Francisco stands to lose approximately $1 million in annual payments which it had imposed on the telephone company for a special city franchise. The full impact of the decision was still under discussion among California municipalities. But there are indications that about a dozen other cities would likewise lose telephone franchise fees.

There was also the possibility that the telephone case decision might affect similar franchise payments now being collected by San Francisco and other cities from other utility companies, such as Pacific Gas and Electric Company. An early reaction, however, seemed to be that the Pacific Gas and Electric Company franchise was in a somewhat different situation than the telephone company's city franchise.

California cities now requiring special franchise tax payments by telephone companies include Oakland, Berkeley, Napa, Vallejo, Stockton, San Jose, Watsonville, Salinas, Fresno, Sacramento, and several southern California municipalities.

San Francisco plans to ask for a rehearing. The city of Berkeley, which formerly imposed a $100,000-a-year franchise tax, is already faced with the loss because its last agreement with the telephone company expired in 1957. Understandably, the telephone company will now agree to no further city franchise levy. Oakland, whose $320,000-a-year franchise expired in 1956, now has a five-year franchise with the company for a reduced fee of only $700,000, which the telephone company offered. Whether this will remain in effect by voluntary compliance was uncertain.

Mark R. Sullivan, president of Pacific Telephone & Telegraph Company, said that "any elimination of franchise payments should be and will be for the benefit of our customers," but his statement also cited steadily increasing costs of wages, taxes, and materials—indicating no rate cut was contemplated.

Mayor George Christopher had commented earlier that loss of the city's franchise fee was "a million dollars out of the pockets of San Franciscans" each year, and hence there should be some grounds for "an adjustment in telephone rates to reflect this (company) saving."

Limited Pay TV Considered

THE Federal Communications Commission has announced that it is ready

to consider applications by television stations to test toll TV under highly limited conditions. The FCC also indicated in a report that it may authorize public showings of pay-as-you-see systems if they are found to be "in the public interest." Under conditions laid down by the FCC, the test demonstration of each system would be limited to one city.

THE suggested move was in line with a resolution proposed by Representative Oren Harris (Democrat, Arkansas), chairman of the House Commerce Committee. It would empower the FCC to authorize "technical test operations" on a highly restricted basis. The commissioners have had a number of meetings with Harris and other committee members. The commission said it believed its step was consistent with current congressional consideration of subscription television.

The commission indicated that any company proposing to try out a coin-box TV system would have to supply its own special equipment to the public. The commission said it had concluded that until it can reach a decision on the establishment of a subscription TV system, the public should not be called upon to purchase any special receiving equipment. The commission said it was prepared to give consideration to subscription TV applications and "will take such action thereon as may be found in the public interest in the light of its review of such applications."

Now it appears possible Representative Harris may drop his resolution and the FCC has agreed to accede to his limitations on tests. These limitations are principally to restrict each toll system to tests in one city. The FCC in the past favored three cities. The decision to consider tests now actually was a switch for the FCC. The agency had intended to wait until after the current congressional session before going ahead with tests. That was to give lawmakers time to comment. At the same time, however, officials said that by the time applications are processed Congress probably will have adjourned.

The FCC added the new limitation—that the public should not have to buy any special equipment for the tests. Promoters of pay TV would have to supply this. Applications to conduct tests under the new conditions will be accepted immediately, a spokesman said. Actually, the FCC had been open in the past to applications—with no promise of authorizing tests. The agency said it never got a qualified applicant.

The TASO Report

ALL industrial users of radio frequencies allocated by the FCC, including telephone companies, will be interested in a recent report made by the Television Allocations Study Organization, known as TASO. The group has for two and a half years been studying the relative merits and demerits of ultrahigh-frequency television as compared with the present conventional very high-frequency television.

TASO's report was delivered to FCC Chairman Doerfer at the National Association of Broadcasters' convention in Chicago on March 16th. The gist of its findings was that UHF is not as useful for television, on the basis of practical experience, as the VHF. The FCC policy in the past has been to encourage TV to go into the UHF sector of the radio spectrum instead of the more crowded VHF area. But the TASO report would suggest that more space be found for TV in the VHF range. At present TV occupies only 12 channels in the VHF band and 70 channels in the UHF band.

No recommendations are made by TASO but its findings are critical of the

present mixed UHF-VHF allocations for television. On the negative side TASO finds that UHF TV deteriorates more rapidly than VHF as the distance from the transmitter increases. UHF antennas and receivers are found to be less efficient and the broadcasting stations more expensive to operate. On the positive side the TASO report finds that UHF television is almost impervious to man-made and natural interference. It also finds that where television operations are conducted over a smooth level terrain, UHF reception is on par with VHF.

TASO was formed in September, 1956, at the suggestion of the FCC, and is sponsored by five organizations: National Association of Broadcasters, Electronic Industries Association, Association of Maximum Service Telecasters, Committee for Competitive Television, and the Joint Council on Educational TV. The study has been conducted by six engineering panels at a cost of nearly $200,000.

Washington Gets "Direct Distance Dialing"

"DIRECT DISTANCE DIALING" (DDD) is to be extended to all telephone users in the Washington metropolitan exchange area on April 12. 1959, by The Chesapeake and Potomac Telephone Company. According to H. Holmes Vogel, vice president in charge of the Washington company, the new service will enable nearly 600,000 Washington area telephone users to dial station-to-station calls direct to approximately 2,500 cities, and more than 46 million telephones simply by dialing a three-digit area code followed by the desired telephone number in the distant city.

For example, Vogel said, a customer wishing to call SUtter 1-0024 in San Francisco, California, would dial the area code 415, followed by the telephone number SU 1-0024. Immediately following the dialing of the last digit, a "charge operator" would come in on the line briefly, on most calls, to record the calling number and in a matter of seconds the call would be completed. There will be a few exceptions for calls from some of the outlying suburban areas, where customers will dial an additional digit or two.

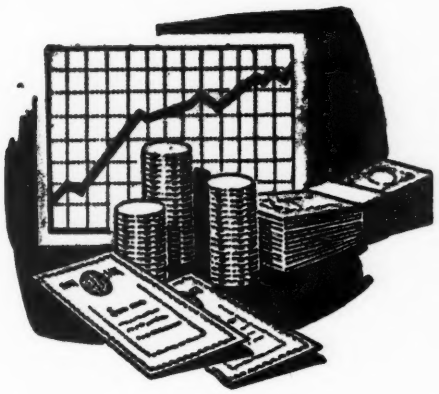
Vogel also explained that while this service has been in effect for several years in the newer dial wire centers in the area, Washington is the first large metropolitan area in the United States to make "Direct Distance Dialing" available to all telephone users. Extensive modification of existing equipment was necessary to accomplish this. He said that in 1953 Washington also was the first metropolitan area to dial nearby long-distance points such as Frederick, Annapolis, and Baltimore.

"DIRECT DISTANCE DIALING" is made possible by automatic message accounting equipment which precisely records billing information for all completed dialed calls. The complex equipment represents years of research by Bell Telephone Laboratories' scientists and extensive planning by the local C&P Company. Continued improvements over the years in handling long-distance calls have made it possible to reduce substantially the time required to establish a connection and the rates charged for it.

The company is issuing full information and instructions to all customers prior to the introduction of the service. This is in the form of an eight-page booklet listing code numbers of 2,500 localities in the United States and Canada.

Financial News and Comment

By OWEN ELY



High Lights of Electric Utility Reports to Stockholders

As usual, our "lead story" in this EEI convention issue is a summary of salient news and comment culled from annual reports to stockholders of electric utility companies. Due to the early timing of this convention, not all of these reports are yet available and hence we may not do justice to a few companies. However, it is believed that sufficient reports have been analyzed to provide general coverage of the topics. While it is difficult to arrange the material logically, revenue topics such as rates, solicitation of new business, etc., will come first, followed by a discussion of operations, efficiency, etc., and then by accounting, dividends, etc.

First, however, a word about the make-up of the reports. Dayton P&L has introduced a novel item—a map of its service area, with industry advantages indicated, is printed separately in the form of a folded road map and tucked into a flap of the cover page. Central Illinois Light has a small folded cardboard—a miniature four-page report with condensed facts about the company—accompanying its regular report. It is always hard to pick the best cover pages but Pacific G&E and Public Service of Colorado should take prizes for scenic beauty.

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Novel charts are always of interest. Pennsylvania P&L has charted the postwar decline of its production cost per kilowatt-hour—from 7.4 mills in 1949 to 4.7 mills last year. Another chart shows what 100 new factory workers add to a community in personal income, retail sales, bank deposits, etc. Five- and ten-year tables are valuable in giving a perspective of growth, increased efficiency, trend of earnings, etc. Dayton P&L's report devotes seven pages to such tables; Pennsylvania P&L has six. Duke Power's chart shows the meteoric rise in kilowatt-hour sales per customer in the postwar period—from 1,600 to nearly 4,800 kilowatt-hours.

Rate increases are a popular and vital subject these days. As Cincinnati G&E aptly states, "Inflation is the major long-term rate problem of the companies. Its effects on operating expenses and con-

struction costs have resulted in downward trends in rate of return despite efficient and economical operation. Accordingly, rate increases are necessary to stem these effects." Some progress, although much too little, is being made in obtaining escalator clauses to adjust rates for changes in fuel costs; it is disappointing that some commissions, especially the California one, won't recognize the justice of such a method of automatic regulation—the stability afforded to utility earnings and the time and money saved in avoiding useless litigation. Illinois Power obtained a gas escalator provision last year, and Dayton P&L is seeking an adjustment clause.

Companies which discuss past or pending rate increases include Niagara Mohawk, Wisconsin Electric Power, Cleveland Electric, Pacific G&E, Illinois Power, Public Service of Colorado, Public Service E&G, Baltimore G&E, and Central Hudson G&E. Iowa-Illinois G&E is now pioneering in accruing depreciation on a fair value plant account rather than on original cost, having been encouraged to do so by a court decision in 1957 allowing fair value in the rate base; in the balance sheet the company uses a "capital maintenance account" under surplus.

AREA DEVELOPMENT. Most utilities now have ample capacity and are more than ever interested in bringing new industries into their areas. Thus area development is a popular topic. "Industrial parks" are increasing, along with shopping centers. Kansas G&E reports that Kansas has the most widely diversified mineral resources—31 in number—of any area of equal size in America. Farm yields per acre set many records and the Blue Stem grass fattens over a million head of cattle annually. Water resources and rainfall are excellent, and the business climate, too.

Atlantic City Electric shows on its cover page the big postwar gain in kilowatthour sales, resulting from the location of many new enterprises in the area. The company co-operates in community planning and gives strong support to the Southern New Jersey Development Council. A big new aviation center (NAFEC) is expected to become a $100 million facility, designed to modernize the nation's air travel control system.

PUGET SOUND'S report describes the many new enterprises coming into its area, some relating to oil and gas while others will produce many diverse items. Virginia E&P continues its area development program by preparation of economic studies, industrial site surveys, community inventories, and long-range plans, etc. Its area development advertising program

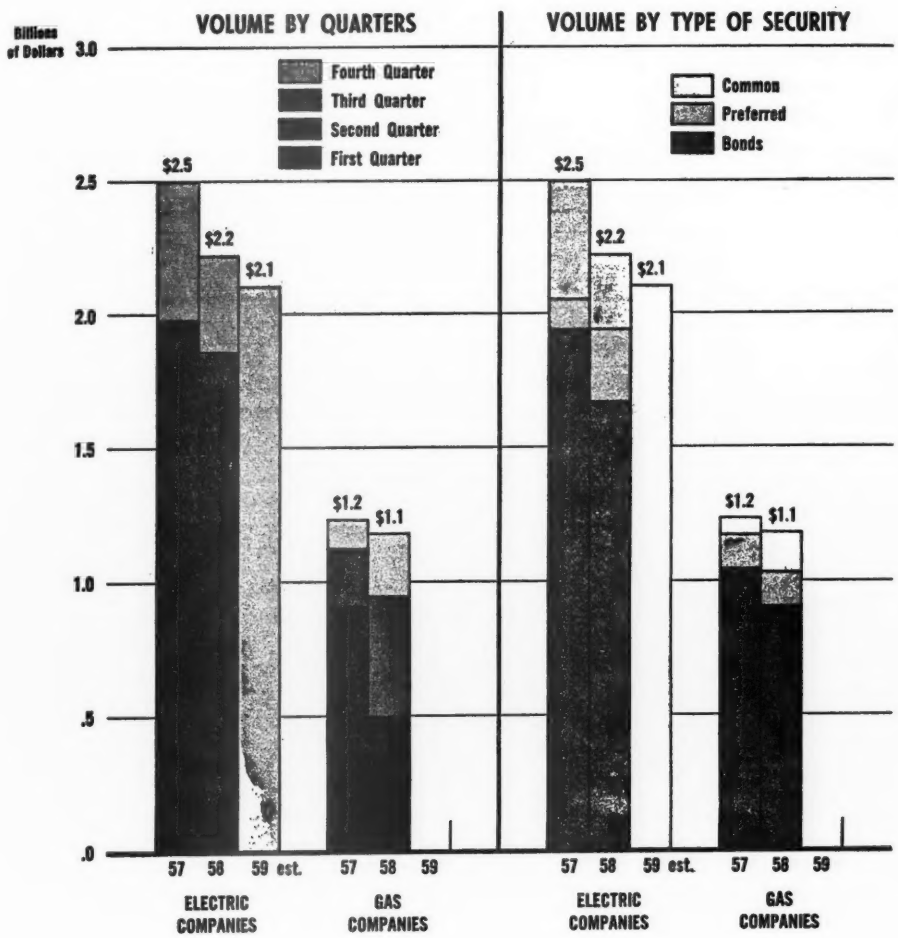
CURRENT YIELD YARDSTICKS
(Standard & Poor's Indexes)

	Mar. 18, 1959	*1958-59 Range*		*1957 Range*	
		High	*Low*	*High*	*Low*
Utility Bonds —A1+	4.28%	4.33%	—3.58%	4.38%	—3.70%
—A1	4.29	4.37	—3.61	4.41	—3.73
—A	4.48	4.53	—3.85	4.70	—3.96
—B1+	4.77	4.96	—4.20	5.21	—4.21
Preferred Stocks*	4.49	4.67	—4.26	4.86	—4.42
Utility Common Stocks	3.71	4.98	—3.71	5.44	—4.73

*Twelve industrial and two utility issues (high-grade).

has received national recognition and awards. Baltimore G&E mentions the program to modernize Baltimore's inner city. Duke Power's report describes the $155 million industrial development in its service area last year, nearly one-third representing chemical and allied interests. American Electric Power mentions the

Summary of Financing
by
Large Electric & Gas Companies



Gas 1959—Reports at date of printing indicate that 1959 financing will be considerably above that done in 1958. Source—Irving Trust Co.—Amounts include new money financings by companies with assets over $35,000,000.

big new aluminum plants which it is now servicing — with full production, two plants will require 675,000 kilowatts, or about the same power as a city of 1.7 million. Several companies, including Wisconsin Electric Power, comment on the St. Lawrence seaway, scheduled for full operation this year; Milwaukee's fine port facilities are being further improved as a "gateway."

HYDRO-FEDERAL, PUD, AND PRIVATE DEVELOPMENT. TVA is the current topic of major interest in this field. The combined efforts of a number of utilities appear to have been successful in obtaining removal of the provision of the House bill permitting expansion at the expense of private utilities, such as Southern Company. Utilities discussing TVA in their reports include Cleveland Electric, Baltimore G&E, Kansas P&L, and others.

Public Service of Colorado reports that construction has started at Glen Canyon and Flaming Gorge on the Colorado river storage project, but thus far Congress has not authorized the Fryingpan-Arkansas proposal. Pacific G&E has not yet obtained government approval for joint development of the Trinity river waterpower resources, although this would save the government an estimated $56 million in construction costs.

Puget Sound P&L reports that its own Baker river development is about 70 per cent complete, while the PUDs' Rocky Reach and Priest Rapids projects on the Columbia river—from which the company has contracted to obtain large blocks of power for a term of years—are about 40 per cent and 70 per cent completed, respectively.

IDAHO POWER'S report features its huge construction program: Rapid completion of the Brownlee dam and a substantial start on Oxbow have finally silenced congressional clamor for a huge federal dam at Hell's Canyon. Idaho has made a second interconnection with the Northwest Power Pool, completing the loop which links all major electric systems, public and private, in the Pacific Northwest. Power from the New York State Power Authority's St. Lawrence project began to flow to Niagara Mohawk Power in 1958, and resultant power savings of $1.2 million are being passed along to domestic and rural customers.

Difficulties with the REA's continue to annoy some utilities, the 2 per cent federal loans being considered an unfair subsidy. Iowa P&L tells how municipalities, co-ops, etc., obtain power from the big Missouri river dams under the "inequitable preference clause." Iowa-Illinois G&E complains that a co-op is building a steam plant with federal funds.

ELECTRIC HEATING. In the development of new business electric heating plays an increasing rôle. Commonwealth Edison has put into effect a 1.5-cent electric heating rate (30 per cent below the previous minimum residential rate), and Central Illinois PS has also done so. With this encouragement and an active promotional campaign, Commonwealth's heating installations jumped from 138 to 839 last year, with an additional 561 in process. Union Electric is also promoting electric space heating intensively and at the end of 1958 had over 1,100 resistance heaters or heat pumps; the average all-electric home in this area spends about $350 a year for electricity, compared with less than $79 by other residential users. Duquesne Light says "Electric house heat is clean, constant, and easily controlled. Heat in different rooms in the home may be controlled by separate thermostats. Baseboard heating is another way of providing elec-

tric house heating." West Penn Electric mentions that 700 of its customers are heating homes electrically.

American Electric Power last year widely promoted the all-electric home and ended the year with 14,266 electrically heated homes, a gain of 37 per cent. The number of residential heat pumps increased from 490 to 694, and homes using resistance heating from 9,923 to 13,572. AEP points out that ten additional manufacturers entered the field of manufacturing heat pumps last year, making a total of 32, of which 20 are making the window type or similar small units. Florida Power Corporation reports that 1958 air-conditioning sales reached a new high of 11,374 units, of which 2,283 were heat

CALENDAR OF PROPOSED UTILITY OFFERINGS

April 1st-June 30th

Date of Bidding Or Sale	*Approx. Amount (Millions)*		*Method Of Offering*	*Probable Moody Rating*
		Bonds		
Apr. 2	$ 7	Gulf Power	C	A
" 9	20	Natural Gas Pipeline Co. of America	N	—
" 15	14	Wisconsin P. & L.	C	A
" 15	11	Central P. & L.	C	A
" 21	5	Diamond State Telephone	C	—
" 28	20	Public Service of Colo.	C	Aa
" 30	20	Alabama Power	C	A
May 12	16	Southwestern Elec. Power	C	—
" 13	15	Idaho Power	C	Aa
" 19	4	El Paso Electric	C	Aa
" 25	14	West Penn Power	C	Aa
" 26	50-75	Consolidated Edison	C	Aa
" 28	25	Southern Electric Generating	C	—
" —	6	Interstate Power		A
June 1	30	Public Service E. & G.	C	A
" 18	5	Worcester Gas Light	C	A
" 25	5	Mississippi Power	C	A
" —	6	Public Service of N. H.		A
" —	5	Brockton Edison	C	A
" —	15	Pennsylvania Electric	C	A
" —	12	Washington Gas Light	C	A
" —	20	Kansas City P. & L.	C	Aaa
" —	5	Missouri P. & L.	C	A
" —	10	Hawaiian Elec.	N	A
		Preferred Stock		
Apr. 14	8	Louisiana P. & L.	C	
" 16	11	Southern Union Gas (Conv.-Rights)	N	
" 22	2	Brockton Edison	C	
May —	4	Interstate Power		
June 9	25	Duke Power	C	
" —	2	El Paso Electric	C	
		Common Stock—Rights Offerings		
Apr. 1	35	Columbia Gas System	C	
" 3	4	Western Mass. Companies		
June 1	25	Virginia Elec. & Power	C	
" —	2	El Paso Electric		
		Common Stock—Offerings to Public		
May —	45	General Telephone	C	
" —	30	Union Electric	C	
" 19	15	Gulf States Utilities	C	

C—Competitive.
N—Negotiated.

pumps; about 85 per cent of new homes are all-electric.

OTHER PLANS TO STIMULATE SALES. A number of reports referred to the *"Full House-Power"* and *"Live Better Electrically"* programs designed to build bigger residential sales. The campaign to end the bottleneck of bad wiring and stimulate appliance sales is mentioned by Wisconsin EP, which has a "Wire on Time" finance plan. Dayton P&L lists new applications of electricity which are being given special emphasis at this time: *"Home*—outdoor lighting, electric blankets, 'Light for Living,' incinerators, modern kitchen, and major appliances. *Commercial*—high-level lighting for effective merchandising; sign and identification lighting; and commercial cooking. *Industry* — gas and electric heat processing, lighting for production, materials handling. *Farm*—automatic feed processing, pig and poultry brooding, milk handling and cooling. *Municipal*—street lighting."

Operating Efficiency. American Electric Power continues to pioneer with large-size plant units and extrahigh transmission lines; President Sporn made an interesting talk recently before the New York Security Analysts. Five units installed last year were 225,000 kilowatts, while two future units will be 450,000 kilowatts. The Kanawha river plant has a heat range of only 9,118 Btu per kilowatt-hour. The system now has nearly 400 miles of 345,000-volt transmission line. Duke Power, Dayton Power & Light, and Philadelphia Electric describe the small amount of fuel required per kilowatt-hour in their newest plants — about 0.7 to 0.8 of a pound; Philadelphia Electric expects some of its new units to use only .64.

Power Pools are discussed in several reports. The new Iowa Power Pool is said to have performed very satisfactorily, and the Pennsylvania-New Jersey-Maryland Pool of eight companies permits greater efficiency and reliability.

Computers. The use of computers is increasing steadily, both for engineering and accounting work. Companies which report on this important trend include Arizona Public Service, Connecticut L&P, Philadelphia Electric, Duke Power, Wisconsin Electric Power, and others.

Atomic Power. Hardly an annual report fails to mention the concerted effort which the utilities are making to promote atomic power and prevent public power proponents from pre-empting this field. Commonwealth Edison reports that work on its Dresden nuclear power station is well ahead of the original schedule, with regular operation expected in July, 1960. Fuel is expected to be put in the reactor late in 1959, leaving the first half of 1960 for preliminary tests. Construction of the Yankee Atomic Power plant is on schedule and *costs are in line with estimates,* according to Connecticut Light & Power. Detroit Edison devotes two pages to a progress report on the Fermi plant. Reactor cost to the utility group represented by Power Reactor Development Company will probably be about $40 million, some 11 per cent more than estimated a year ago; the scheduled date for initial operation is now September, 1960. The running battle with AFL-CIO over the safety of this plant still continues, although the position of PRDC has been upheld on practically every count. Interstate Power and a group of ten other utilities in the Midwest (Central Utilities Atomic Power Associates) plan to build a 66,000-kilowatt atomic plant to be located near Sioux Falls, South Dakota. Pacific Gas and Electric reports that it is engaged in more nuclear projects than any other electric utility.

MEASURING THE WEATHER. Iowa P&L discusses the increasingly important effect of weather on both gas and electric sales. The meaning of "degree-days" is explained — the amount by which the average of the low and high temperature for a certain day is colder than 65 degrees measures the degree-days for that day; and the figures are merely added together for the month or the heating season. But as yet there is no generally accepted yardstick for measuring hot weather in connection with air conditioning—perhaps when the government perfects its proposed "comfort" index based on temperature and humidity something can be worked out.

Air Polution is a growing problem in Los Angeles and other big cities. Southern California Edison has spent $1 million to install a full-scale electrostatic precipitator at its El Segundo steam station.

Accelerated Depreciation. The new issue raised by the SEC regarding tax savings from accelerated depreciation is reviewed at some length by Long Island Lighting Company. LILCO is normalizing deferrals but is not using a reserve in the balance sheet. Philadelphia Electric also discusses the subject, stating that its tax savings are being allocated to increased depreciation on the stockholders' books—a form of normalization used in Wisconsin, also by Puget Sound P&L and possibly others. Union Electric has discontinued normalizing in Missouri and Iowa, but continues to normalize in Illinois where the commission has allowed deferred income taxes for rate purposes. Normalization is still an issue in California, according to the report of Pacific G&E; the company continues to normalize, and the commission has not yet indicated its final decision.

STOCKHOLDERS AND DIVIDEND POLICY. As usual a number of utilities present tables showing the division of stockholders among men, women, institutions, etc. The ladies outnumber the men to a considerable extent in most cases, although the situation is somewhat obscured by the substantial amount of stock held in joint accounts and by fiduciaries, brokers, nominees, and institutions. These tables are very helpful.

FINANCIAL DATA ON ELECTRIC UTILITY STOCKS

Annual Rev. (Mill.)			*3/17/59 Price About*	*Dividend Rate*	*Approx. Yield*	*Recent Share Earns.*	*% Increase*	*Aver. Incr. In Sh. Earns. 1953-58*	*Price-Earn. Ratio*	*Div. Payout*	*Approx. Common Stock Equity*
$297	S	American Elec. Power	54	$1.68	3.1%	$2.31Ja	4%	9%	23.4	73%	33%
50	O	Arizona Pub. Serv.	40	1.20	3.0	*1.89Se	2	x7	*21.2	63	27
11	O	Arkansas Mo. Power	22	1.00	4.5	1.34Se	3	x2	16.4	75	32
36	S	Atlantic City Electric	45	1.50	3.3	1.94Ja	8	10	23.2	77	30
153	S	Baltimore Gas & Elec.	49	1.80	3.7	2.39De	3	8	20.5	75	43
7	O	Bangor Hydro-Elec.	41	2.00	4.9	2.52De	14	5	16.3	80	36
6	O	Black Hills P. & L.	33	1.44	4.4	2.54Ja	20	4	13.0	57	32
109	S	Boston Edison	66	2.80	4.2	3.55De	14	4	18.6	79	43
27	A	Calif. Elec. Power	23	.80	3.5	*1.14De	24	6	*20.2	70	35
23	O	Calif. Oreg. Power	39	1.60	4.1	1.91F	D16	x2	20.4	84	35
8	O	Calif. Pac. Util.	37	1.60	4.3	2.18Ja**	—	20	16.2	70	30
67	S	Carolina P. & L.	39	1.32	3.4	2.01Ja	7	7	19.4	66	40
32	S	Cent. Hudson G. & E.	21	.80	3.8	1.17De	5	6	17.9	68	36
23	O	Cent. Ill. E. & G.	34	1.44	4.2	2.08De	6	4	16.3	70	43
39	S	Cent. Ill. Light	38	1.40	3.7	2.04Ja	D1	9	18.6	69	36
53	S	Cent. Ill. P. S.	43	1.76	4.1	2.57De	4	16	16.7	68	40
17	O	Cent. Louisiana Elec.	47	1.80	3.8	2.21De	2	8	21.3	81	33
38	O	Cent. Maine Power	27	1.40	5.2	*1.63Ja	D10	3	*16.6	86	32

Annual Rev. (Mill.)		(Continued)	3/17/59 Price About	Dividend Rate	Approx. Yield	Recent Share Earns.	% Increase	Aver. Incr. In Sh. Earns. 1953-58	Price-Earn. Ratio	Div. Payout	Approx. Common Stock Equity
137	S	Cent. & South West	64	1.80	2.8	2.54De	5	10	25.2	71	40
12	O	Cent. Vermont P. S.	21	1.00	4.8	*1.33De	28	11	*15.8	75	35
128	S	Cincinnati G. & E.	35	1.50	4.3	1.85De	D8	4	18.9	81	43
7	O	Citizens Util. "B"†	26	1.05	4.0	1.25Se	7	x7	20.8	84	40
119	S	Clevel. Elec. Illum.	52	1.60	3.1	2.60De	D1	6	20.0	62	45
6	O	Colo. Cent. Power	39	1.32	3.4	1.99De	20	6	19.6	66	41
46	S	Columbus & S. O. E.	38	1.60	4.2	2.02De	D21	0	18.8	80	30
405	S	Commonwealth Ed.	63	2.00h	5.2h	3.28De	15	8	19.2	61	43
14	A	Community Pub. Ser.	24	1.00	4.2	1.32De	1	5	18.2	76	44
78	O	Conn. Lt. & Pr.	24	1.10	4.6	*1.41De	16	5	*17.0	78	39
582	S	Consol. Edison	65	2.80	4.3	*3.74De	9	5	*17.4	75	38
228	S	Consumers Power	60	2.40	4.0	3.19Ja	D4	0	18.8	75	39
83	S	Dayton P. & L.	56	2.40	4.3	3.21De	2	4	17.4	75	40
50	S	Delaware P. & L.	67	2.10	3.1	2.89De	5	11	23.2	73	33
246	S	Detroit Edison	48	2.00	4.2	2.19Ja	D16	3	21.9	91	50
145	A	Duke Power	48	1.40i	3.0	2.39De	10	11	20.0	59	48
99	S	Duquesne Light	25	1.10	4.4	*1.40De	3	5	*17.9	80	34
33	O	East. Util. Assoc.	40	2.20	5.5	2.87Ja	16	2	14.0	77	34
16	O	El Paso Elec.	33	1.16	3.5	1.58Ja	12	10	20.9	73	37
12	S	Empire Dist. Elec.	25	1.20	4.8	1.61De	8	3	15.5	75	32
57	S	Florida Power Corp.	31	.72	2.3	1.20De	20	18	25.8	60	35
145	S	Florida P. & L.	95	1.64	1.7	3.51De	18	26	27.1	47	35
183	S	General Pub. Util.	53	2.12	4.0	*3.08De	2	7	*17.2	69	41
7	O	Green Mt. Power	21	1.00	4.8	1.41De	30	12	14.9	71	37
19	S	Gulf States Util.	64	1.80	2.8	2.61Ja	15	7	24.5	69	35
51	A	Hartford Electric	71	3.00	4.2	*4.08De	D6	5	*17.4	74	40
25	O	Hawaiian Elec.	57	2.50	4.4	3.05De**	D3	8	18.7	82	38
87	S	Houston L. & P.	72	1.60	2.2	2.94De	7	9	24.5	54	42
30	S	Idaho Power	44	1.60	3.6	2.56De	15	10	17.2	63	34
92	S	Illinois Power	40	1.50	3.8	2.14Ja	8	10	18.7	70	37
46	S	Indianapolis P. & L.	39	1.50	3.8	2.12Se	3	x7	18.4	70	35
30	S	Interstate Power	19	.85	4.5	1.09De	8	4	17.4	78	31
36	S	Iowa Elec. L. & P.	36	1.60	4.4	2.12Ja	2	x5	17.0	75	38
44	S	Iowa-Ill. G. & E.	37	1.80c	4.9	2.35De	D14	—	15.6	77	43
41	S	Iowa P. & L.	36	1.60	4.4	2.03De	D2	1	17.7	79	34
35	O	Iowa Pub. Ser.	19	.80	4.2	1.16Ja	3	8	16.4	69	32
15	O	Iowa Southern Util.	30	1.36	4.5	2.02Ja	6	4	19.8	67	40
61	S	Kansas City P. & L.	52	2.20	4.2	3.05De	4	5	17.0	62	37
33	S	Kansas G. & E.	43	1.48	3.4	2.52De	8	9	17.0	59	31
50	S	Kansas P. & L.	32	1.36 l	4.3	2.10De	2	12	15.2	65	34
43	O	Kentucky Util.	37	1.52	4.1	2.36De	22	8	15.6	64	40
7	O	Lake Superior D. P.	26	1.20	4.6	1.57Se	D2	x3	16.6	76	39
122	S	Long Island Ltg.	33	1.20	3.6	1.62De**	13	8	20.4	74	36
61	S	Louisville G. & E.	44	1.30	3.0	2.22De	22	7	19.8	59	42
10	O	Madison G. & E.	52	1.80	3.5	3.46Se	D19	x11	15.0	52	44
5	A	Maine Pub. Ser.	24	1.20	5.0	1.57Ja	14	7	15.3	76	39
6	O	Michigan G. & E.	65	1.70 j	5.6	4.51Se	12	x8	14.4	38	40
183	S	Middle South Util.	49	1.90	3.9	2.63Ja	7	5	18.6	72	39
30	S	Minn. P. & L.	37	1.60	4.3	2.30Ja	D9	3	16.1	70	33
3	O	Miss. Valley P. S.	29	1.40	4.8	2.12N	D2	x3	13.7	66	32
15	S	Missouri P. S.	20	.72f	5.6	.90Ja	D14	3	22.2	80	28
7	O	Missouri Util.	27	1.36	5.1	1.65De	D6	0	16.4	82	33
44	S	Montana Power	73	2.00	2.7	*3.96De	5	10	*18.4	51	39
159	S	New England Elec.	21	1.00	4.8	1.29De**	6	2	16.3	78	34
46	O	New England G. & E.	24	1.10	4.6	1.64Ja**	10	7	14.6	67	41
89	S	N. Y. State E. & G.	57	2.30	4.0	*4.02Ja	30	11	*14.2	57	37
264	S	Niagara Mohawk Pr.	40	1.80	4.5	*2.12De	11	—	*18.7	85	28
92	O	Northern Ind. P. S.	53	2.00	3.8	2.77De	D10	3	19.1	72	36
148	S	Nor. Sts. Power	24	1.10	4.6	1.29De	3	3	18.6	85	33
10	O	Northwestern P. S.	21	1.00	4.8	1.43Se	7	x0	14.7	70	27
138	S	Ohio Edison	62	2.64	4.3	3.62Ja	—	3	17.1	73	40
50	S	Oklahoma G. & E.	34	1.00	2.9	1.45De	14	10	23.4	69	30
21	O	Orange & Rockland Utils.	24	.90	3.8	*1.29De**	3	22	*18.6	70	26
17	O	Otter Tail Power	33	1.60	4.8	2.18Ja	D1	1	15.1	73	30
535	S	Pacific G. & E.	65	2.60	4.0	3.74De	10	7	17.4	70	34
52	O	Pacific P. & L.	40	1.60	4.0	*2.40De	17	9	*16.6	67	30

Annual Rev. (Mill.)		(Continued)	3/17/59 Price About	Dividend Rate	Approx. Yield	Recent Share Earns.	% Increase	Aver. Incr. In Sh. Earns. 1953-58	Price-Earn. Ratio	Div. Payout	Approx. Common Stock Equity
131	S	Penn Power & Lt.	58	2.50	4.3	3.22De	—	2	18.0	78	34
248	S	Phila. Elec.	52	2.24	4.3	*2.76De	6	4	*18.8	81	38
36	O	Portland Gen. Elec.	32	1.20	3.8	1.80De	3	8	17.8	67	37
69	S	Potomac Elec. Pr.	29	1.20	4.1	*1.55Se	NC	x3	*18.8	77	32
97	S	Pub. Serv. of Colo.	53	1.90k	3.6	2.66De	D5	5	20.0	71	33
344	S	Pub. Serv. E. & G.	43	1.80	4.2	2.14De	D6	4	20.0	84	35
81	S	Pub. Serv. of Ind.	47	2.10	4.5	2.89Ja	6	5	16.3	73	33
32	O	Pub. Serv. of N. H.	20	1.00	5.0	1.27Ja	D4	7	15.8	79	36
15	O	Pub. Serv. of N. M.	30	.80g	2.7	1.39De	15	11	21.6	58	34
27	S	Puget Sound P. & L.	35	1.44	4.1	*1.97De	8	12	*17.8	73	50
65	S	Rochester G. & E.	43	1.80	4.2	2.58De	14	3	16.7	70	37
8	S	St. Joseph L. & P.	35	1.50	4.3	1.91De	D7	2	18.3	79	32
59	S	San Diego G. & E.	27	1.04	3.9	1.40Ja	1	3	19.3	74	35
11	O	Savannah E. & P.	28	1.00	3.6	1.46De	7	5	19.2	68	33
11	O	Sierra Pacific Pr.	35	1.40	4.0	1.98Ja	1	10	17.7	71	32
256	S	So. Calif. Edison	64	2.60	4.1	3.70De	22	9	17.3	70	36
46	S	So. Carolina E. & G.	35	1.30	3.7	1.89N	22	x15	18.5	69	35
7	O	Southern Colo. Pr.	20	.90	4.5	1.52N	15	9	13.2	59	38
255	S	Southern Co.	35	1.30	3.7	1.81De	10	9	19.3	72	32
20	S	So. Indiana G. & E.	37	1.60	4.3	2.49Ja	6	3	14.9	64	35
8	O	So. Nevada Power	26	1.00	3.8	1.59De	1	6	16.4	63	40
3	O	Southwestern E. S.	18	.64	3.6	.95N	7	x6	19.0	67	27
44	S	Southwestern P. S.	45	1.48	3.3	1.81Ja	—	4	24.9	82	36
32	A	Tampa Elec.	54	1.20	2.2	1.78Ja	7	10	30.3	67	33
155	S	Texas Utils.	67	1.76	2.6	2.76Ja	7	12	24.3	64	40
42	S	Toledo Edison	17	.70	4.1	1.12De	11	4	14.3	63	31
16	O	Tucson G. E. L. & P.	30	.76	2.5	1.12De**	—	12	26.8	68	35
129	S	Union Elec. of Mo.	35	1.52	4.3	*1.77De	5	6	*19.8	86	32
36	O	United Illum.	30	1.38	4.6	1.64De	3	3	18.3	84	50
6	O	Upper Peninsula Pr.	32	1.60	5.0	1.83De	4	2	17.5	87	32
45	S	Utah Power & Light	35	1.20	3.4	1.75De	D4	7	20.0	69	44
140	S	Virginia E. & P.	38	1.10	2.9	1.66De	8	17	22.9	66	39
31	S	Wash. Water Pr.	47	2.00	4.3	*2.33De	D5	6	*20.2	86	32
140	S	West Penn Elec.	36	1.60	4.4	2.27Ja	3	6	15.9	70	32
77	O	West Penn Power	58	2.40	4.1	3.27Se	D1	x6	18.0	73	36
12	O	Western Lt. & Tel.	41	2.00	4.9	2.82De	2	2	14.5	71	41
28	O	Western Mass. Cos.	28	1.20	4.3	1.67De	4	13	16.8	72	50
114	S	Wisc. Elec. Pr. (Cons.)	41	1.60	3.9	2.12De	D12	1	19.3	75	36
44	O	Wisconsin P. & L.	33	1.36	4.1	2.03De	2	4	16.3	67	37
43	S	Wisconsin P. S.	27	1.20	4.4	1.77De	5	3	15.3	68	37
		Averages			4.0%		5%	7%	18.4	72%	
		Foreign Companies									
215	S	Amer. & Foreign Power	18	$1.00	5.6%	$1.98Se	x14%	0	9.1	51%	44%
170	A	Brazilian Traction	6½	.25	3.8	1.52D'57	D30	0	4.3	16	75
83	A	British Col. Pr.	41	1.40	3.4	1.95De	D16	7	21.0	72	28
20	O	Calgary Power	92	2.00	2.2	4.55N	x16	24	20.2	44	27
19	A	Gatineau Power	43	1.50	3.5	2.55De	7	9	16.9	59	33
42	O	Mexican L. & P.	14	1.00b	7.1	1.96D'57	x17	24	7.1	51	46
15	A	Quebec Power	39	1.60	4.1	2.34De	8	10	16.9	68	53
63	A	Shawinigan Water & Pr.	35	.68	1.9	1.48D'57	x5	26	23.6	46	37

*Deferred taxes resulting from liberalized depreciation are not normalized. If they had been normalized the price-earnings ratio would be higher. **On average shares. †Stock dividends (only) are paid on the "A" shares. x—Average increase in share earnings 1952-57. D—Decrease. NC—Not comparable. A—American Stock Exchange. O—Over-counter or out-of-town exchange. S—New York Stock Exchange. Ja—January; F—February; Ma—March; Ap—April; My—May; Je—June; Jy—July; Au—August; Se—September; Oc—October; N—November; De—December. b—Also 5 per cent stock dividend May 1, 1958. c—Also 5 per cent stock dividend March 10, 1958. f—Also stock dividend of one-half per cent quarterly. g—Also 5 per cent stock dividend July 1, 1958. h—Also 2 per cent stock dividend November 20, 1958, included in the yield. i—Also 15 per cent stock dividend January 29, 1959. j—Also 3 per cent stock dividend (paid each year end) included in yield. k—Also 5 per cent stock dividend payable February 20, 1959. l—Includes 6 cents extra.

What Others Think

Depreciation Again

"THE poor we have with us always." So do we have depreciation or, more pertinent, the controversy as to how depreciation as an operating expense should be determined. In the January 15th issue of PUBLIC UTILITIES FORTNIGHTLY, Dr. Ring, of the University of Florida, takes another look at the problem and comes up with a proposal, novel in form, but really an old theory put in different words.[1] Dr. Ring proposes that depreciation be computed on the basis of "liability to replace," really an euphemism for what traditionally and in more prosaic language is the current price of depreciable plant. A change in the phraseology leaves the old concept none other than it has been for many years, during which the economy has been harassed by rising price levels.

Inflation has admittedly created a problem in the realm of depreciation as it has in many other segments of the economy. But a shift in the computation of the proper charge is a weak instrument for meeting a problem that calls for more drastic and more appropriate therapy. This is not to suggest that we have no difficulty in this area but, simply, that the remedy proposed is open to more serious criticism than is the malady for the cure of which it is prescribed.

IN the Lindheimer case in 1934,[2] Mr. Justice Hughes gave the classic definition of depreciation: "Broadly speaking, depreciation is the loss, not restored by current maintenance, which is due to all the factors causing the ultimate retirement of the property. . . ." The federal tax authorities, the accounting profession, and, in general, regulation authorities and the courts, with few lapses, have held that depreciation, as an operating expense, is a function of actual investment rather than of present price levels. While economic truth is not necessarily found by citation of authorities or by a popular poll, any departure from established doctrine must prove a good case for its rejection.

If it be the purpose of depreciation accounting to replace depreciable plant here and now, necessarily it follows that it should be figured so as to meet the "liability to replace." If, on the other hand, depreciation is charged in such amount as to recover investment at the end of service life of the plant, as is now gen-

[1] "The Economic Liability to Replace," by Alfred A. Ring. PUBLIC UTILITIES FORTNIGHTLY, Vol. 63, No. 2, January 15, 1959, p. 73.

[2] Lindheimer *v.* Illinois Bell Teleph. Co. 292 US 151, 182, 3 PUR NS 337.

erally accepted doctrine, then it follows inevitably that investment, rather than replacement cost, is the base with which to begin.

But Dr. Ring's prescription raises many questions. First, and not necessarily most compelling, is the present estimate of what the cost of replacement will be at the time the plant is retired from use. Not even IBM or the inventors of a Univac machine have mastered the technique that will open the crystal ball and reveal plant prices years in the future. Not clothed with such clairvoyance, it follows that at the end of service life the depreciation reserve is likely to be either inadequate or more than adequate.

Since the courts have held consistently that the excess in the depreciation reserve belongs to the owners of the utility, collections during a period of high prices indicate that customers have been charged more than cost and owners have received a windfall in the event that prices at replacement time are lower than during the period of service of plant. While there is much evidence that prices in this country are more likely to rise than to fall, most economists would be unwilling to stake their reputations upon predicting this end as inevitable. A generation ago we had our "new economic era" forecasters. Such authorities, were they now alive, might suffer some embarrassment in the light of subsequent experience.

But the case against Dr. Ring's thesis can be put on stronger grounds. The present writer, in an article published in Public Utilities Fortnightly in 1950,[3] attempted to show that the acceptance of Dr. Ring's proposal would result in a gift by the taxpayer to utility owners. I shall not again present that analysis, but I suggest another basis upon which the Ring proposal is open to criticism. This can be done best by a simple illustration.

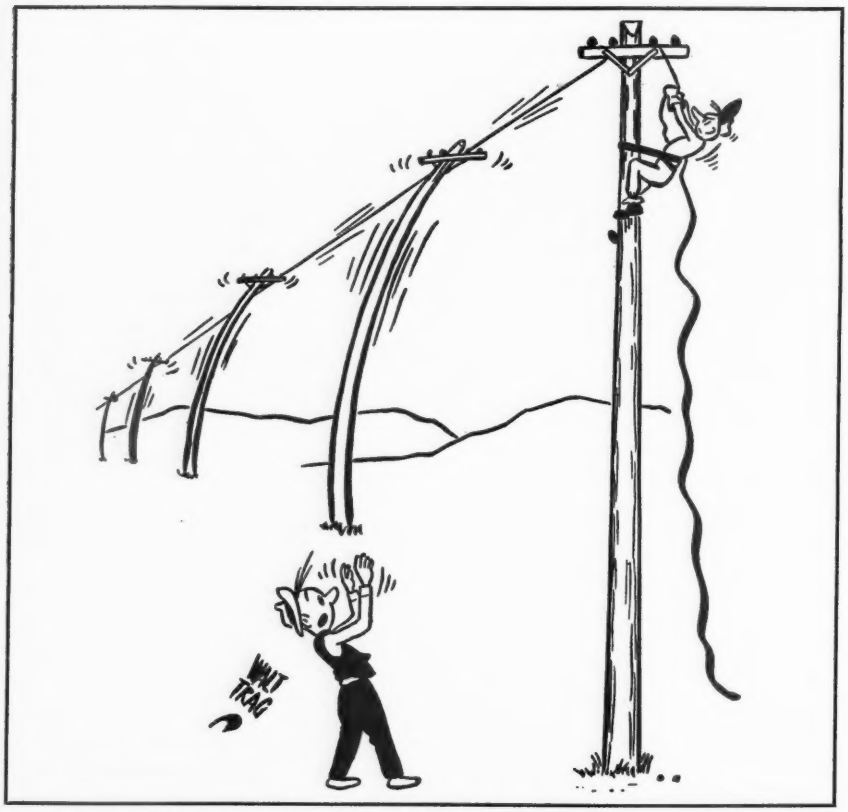
Suppose a utility has the following capital structure:

Bonds	$1,000,000
Preferred stock	400,000
Common stock	600,000

This capital structure is not far out of line with that found in many electric utility companies. In this case the common represents 30 per cent of the total investment. Assume that this plant was constructed when the price level was 100 and that plant depreciated at the rate of 5 per cent annually. Depreciation as an operating expense, therefore, would be $100,000 annually.

Assume now that the price level has doubled and that the guessers have been right in their prediction, and, further, that over the service life depreciation has been computed on the basis of the $4 million "liability to replace"; that is, at $200,000 annually. This assumption predicates a degree of wizardry not experienced in real life, but it is given to simplify the problem and to point to the effect of the use of such a formula. Now the utility will have the same capital structure, assuming that the bonds have not matured and the preferred is still outstanding. In such event the plant now has an investment of $4 million which is used as a rate base. The common, as residual owner, has had an increase in equity from $600,000 to $2.6 million, or an increase of 333⅓ per cent. To retain his dollar position so as to compensate for higher prices he would need only $1.2 million or a 100 per cent increase. By the Ring formula the owner

[3] "Should Price Levels Affect Depreciation Accrual?" By Clyde Olin Fisher. Public Utilities Fortnightly, Vol. XLV, No. 11, May 25, 1950, p. 683.



"I GUESS ALVIN'S MOTHER-IN-LAW IS VISITING THEM AGAIN"

would be handed as a windfall whatever amount of money was needed to compensate for dollar erosion to bondholders and to preferred stockholders. This might be considered by bondholders and preferred stockholders as something worse than a pyrrhic victory. For the common in such a case inflation would have no terrors and would be welcomed as a bonanza. Why, in equity, should the common gain what some other investor has lost?

It is true that the utility, in return for the right to operate, has assumed an obligation to serve and to supply whatever funds may be needed for such service. This obligation has been coupled with what might be called the "privilege" to serve even in an expanding market. And one need not forget that in meeting this obligation, if it involves additional investment, the owner is entitled to a return on the added as well as on the original commitment. This "risk" or privilege is implicit in his assumption of the rôle of investor.

One might expand upon the lot of the common stock owner of a utility in a period of rising prices. But this is a risk that he takes, as does the bondholder, in return for the price paid for such risk. With the elimination of such risk—and

what investment does not involve a calculated risk—the owner presumably should have received a less generous return. It would be an anomaly to grant a return which reflected a risk and then, by depreciation accounting, not only dissipate that risk but offer the possibility of gaining whatever may have been lost by bond and preferred owners. Furthermore, there is no problem of equity if the investor accepts the pattern of regulation at the time of his commitment.

THERE is one further approach that is relevant. Have utility corporations, despite the lack of the Ring lure, experienced difficulty in attracting funds for investment? As is well-known, the relative stability of utility earnings has made possible the payment of most earnings as dividends. Consequently, expansion must be financed by outside rather than by internally generated funds. Many utilities since the close of World War II have invested twice as many dollars as were committed during their entire existence prior thereto. And there is no evidence that owners of funds have found the investment promise unattractive.

Yes, inflation is a problem. It must be met head-on and not by a palliative such as Professor Ring proposes, a palliative that would be less desirable than the monster it is designed to slay. The problem of inflation calls for more drastic economic surgery!

—CLYDE OLIN FISHER,
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Proposed Columbia River Development Corporation

ANY federal government proposal which encompasses a large geographical area is bound to produce great comment—pro and con—from a variety of sources.

The Columbia river, being one of the prime sources of hydroelectric power in this nation, has had its full share of debates, hearings, and comment in the past years. This vast power source vitally affects the states of Montana, Idaho, Oregon, and Washington. The entire northwestern area of the United States and Canada is affected, in varying degrees, by policies established to govern the use of this great waterway and its tributaries.

A number of years ago the Army Corps of Engineers prepared a master plan for the development of the Columbia river and its associated waterways. This report is familiarly known as the "308 report." A revision of the plan has been submitted to Congress and it forms, in the words of Raymond Moley, well-known syndicated columnist, as quoted in the Boise, Idaho, *Statesman*, "a most illuminating and comprehensive treatment of the multitudinous human uses that are possible from the control of water in the agricultural and industrial activities of a great and growing section of the country."

One of the "multitudinous uses" which produces the most comment is the generation of hydroelectric power. There are various estimates made of the power requirements and potential requirements of the area. The *Oregon Agriculture* sums up the various estimates in the following way:

> There is much confusion as to whether there is enough power to take care of all probable needs for the next several years and statements are made that there is or there is not with equal justification. Getting away from the

technical computations it can be said that there will be substantially enough hydro power in the Northwest Power Pool to supply all anticipated needs for the next ten years providing we have average or better water supplies in the Columbia.

THE 1937 Bonneville Project Act was enacted to govern wholesale marketing of power generated by federal projects in the Northwest. This was to have been interim legislation which would take care of the period immediately following the construction of the Bonneville dam. Since 1937 new dams constructed by the Corps of Engineers and the Bureau of Reclamation encompass twelve power plants and will market power from five additional dams which are now under construction. The new dams will boost the output of the Columbia river system from 5,334,000 kilowatts to 7,818,650 kilowatts, and revenues from these installations will pass the billion dollar mark.

Recent emphasis has shifted from the much debated Hell's Canyon issue to discussion of the future development of the Columbia river as a whole. In past years no less than 29 legislative proposals have been made regarding this matter. These bills have ranged from proposals which would establish a Columbia Valley Authority (CVA), patterned after the Tennessee Valley Authority, to an Interstate Compact with regional control. Concerning these two plans the *Oregon Agriculture* states:

> The CVA was very unpopular throughout the Northwest and is a bad word. The Interstate Compact was in the process of development but it ran into politics and also was vigorously opposed by the public power advocates of the area who prefer federal control. The compact has not yet been pronounced dead but it has not been able to get up off the floor.

IN an attempt to reach some sort of mid-ground between these two proposals, Senator Richard L. Neuberger (Democrat, Oregon), during the last Congress, introduced a bill to establish a Columbia River Development Corporation (S 3114). The purpose of the corporation is to convert the Bonneville Power Administration into a federal corporation. The corporation would have power to sell revenue bonds up to $750 million and to use its revenue to finance new hydroelectric projects, constructed as they are now by the Army Engineers and the Bureau of Reclamation. (A precedent for this type of financing can be found in the government guaranty of bonds of the St. Lawrence Seaway Development Corporation.) Since these revenue bonds would be self-liquidating the idea is that construction of new projects could proceed without the necessity of going to Congress for each new appropriation. Congressional approval of the plan itself would, of course, be necessary, but the appropriation stumbling block would be removed. The following excerpt from the bill itself will furnish a further hint as to the conciliatory nature of the proposal:

> Nothing in this act shall affect or in any way interfere with the laws of any state relating to the control, appropriation, use, or distribution of water used in irrigation, or any vested right acquired thereunder, and the corporation, in carrying out the provisions of this act, shall proceed in conformity with such laws, and nothing herein shall affect any right of any state or of the federal government or of any landowner, appropriator, or user of water in, to, or from any interstate stream or the waters thereof.

THIS provision was written into Senator Neuberger's bill to forestall the claims that such legislation would infringe upon the rights of states to regulate water use within their boundaries. Perhaps the very conciliatory nature of the bill contributed to the varied and bitter comment which resulted when Senator Neuberger conducted hearings in December of 1958. One critic quipped that the Senator's bill was halfway between sin and virtue. Hearings for interested parties were held in Oregon, Washington, Idaho, and Montana.

Herbert Lundy of the Portland *Oregonian* testified that "Only a region-wide agency with planning authority superseding that of local utilities, state and federal agencies in the field of power will be strong enough to do the job." The proposed federal corporation, he said, "must not become super government. It must be fully responsible to the highest elected officials in the nation."

Lundy further stated that the prime benefit from establishing the Columbia river corporation would be "escape from frustrating dependence on congressional appropriations."

Senator Neuberger himself states that the new bill would permit the allocation to the corporation of new power supplies to assure that there would be no unreasonable geographic concentration of power sold by the corporation, and "Although these agencies would continue to build and operate the dams, the corporation would be empowered to construct and operate thermal and atomic power plants, as well as the transmission system presently operated by the Bonneville Power Administration."

OPPOSITION to the bill was sharp and varied. Carlson Marks of the Spokane *Spokesman Review* feels that the establishment of such a corporation could bring about "apathy" and relaxation of interest among members of Congress who were not directly interested in the area.

Forrest C. Rockwood, a Kalispell, Montana, attorney, asserts that

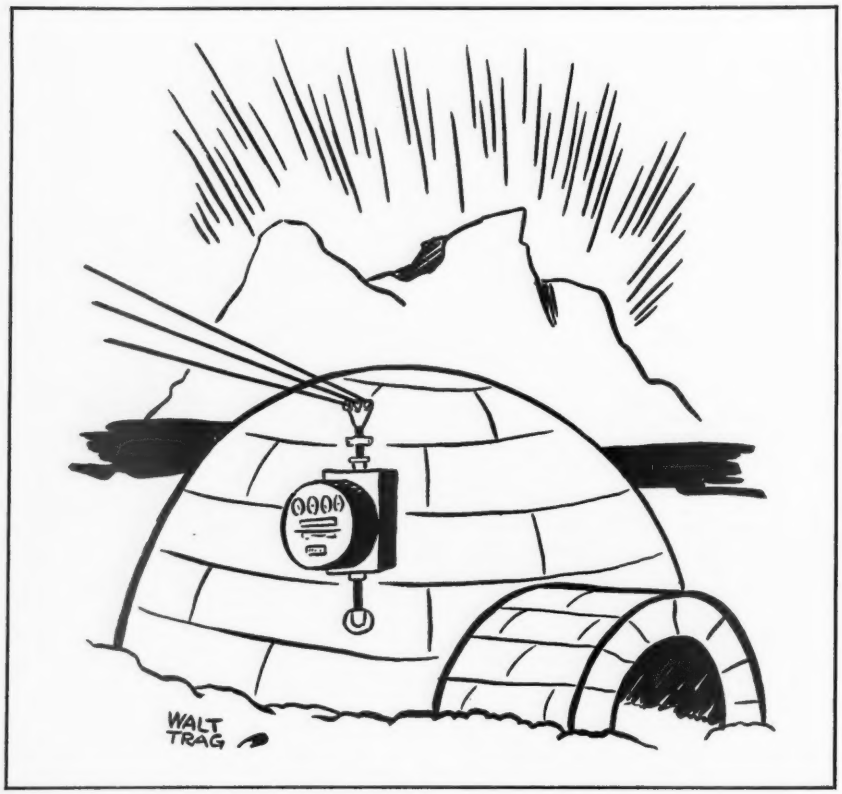
> Under this bill, the five corporation directors would for the most part control all matters having to do with the generation and distribution of power, the sale of power, the dams themselves, navigation, flood control, the use and flow of the water, fish and wild-life concerns, water pollution, watershed control, and recreation. These directors would be appointed by the President and neither the states, Congress, nor the Supreme Court actually would have any restraining or controlling powers over them.

The *Seattle Post Intelligencer,* in a strong opposition editorial, claimed that such a corporation would be creating the "greatest federal Frankenstein" that had ever been seen in the Northwest, and that the three-man "czarist board" could not be removed from office by the area citizens for any cause whatsoever.

Various chambers of commerce have objected to the bill because of the fear that it would destroy local agencies, public and private, which are now carrying on power and water development.

ANOTHER biting editorial, which appeared in the Kalipsell, Montana, *Inter Lake,* states:

> Senator Neuberger took strong exception to a statement by Robert Keller, which implied that the legislation is socialistic in nature. There is no reason why the Senator should take exception, in our opinion. The proposed corporation is socialistic throughout, and cannot be masked as anything else despite the clever wording of title and content of the legislation. Whenever we have



a situation that permits ownership and control by the federal government we have Socialism—and the pious pleas of Senator Neuberger and others who support such legislation cannot hide or change that fact.

MONTANA'S Governor J. Hugo Aronson refers to the bill as "warmed-over TVA." Further objections and protests have been made by sportsmen's associations on the grounds that it would be detrimental to use of the lands for outdoor activities; by mining groups, which fear that it would prevent the development of mineral resources in the area; and by conservation groups, which fear for the natural resources of the area, and, in particular, for the fish spawning grounds. Those speaking for and against the legislation form such a wide band of varied interests and commands that the *Journal of Commerce* commented:

> The hearings themselves gave proof that few people in this area are familiar with the proposal; unfortunately it appeared that just as few were willing to learn about it. As a result we are not even sure of the subject of the hearing —whether it concerned TVA, Socialism, concentration of powers, dispersion of powers, or some other subject.

The above-quoted editorial, in part, sums up the reason that a new bill has not

been submitted during the 86th Congress. S 3114, as an active legislative proposal, died when the 85th Congress adjourned. At the present time it is understood from a spokesman in Senator Neuberger's office that "conversations" between interested legislators are going on regarding the possibility of submitting a new bill which perhaps would alleviate some of the criticism which has been leveled at the previous proposal. S 3114 itself is a revised version of a bill introduced earlier by Neuberger.

When and if a new bill is submitted to establish a Columbia River Development Corporation, no matter what form it may take, it is sure to arouse heated debate and bitter controversy. There seems to be no simple solution. Indeed, a simple solution devoid of controversy would be impossible when it is remembered that the corporation would encompass four states, necessitate negotiations with Canada, and affect and influence industry, wild life, and the entire economic complexion of the Northwest section of our nation.

Progress of Atomic Energy in Florida

In December of 1957, Florida Power Corporation and Tampa Electric Company, collectively known as Florida West Coast Nuclear Group and herein referred to as "FWCNG," together with fifteen other companies, collectively known as East Central Nuclear Group, Inc., and herein referred to as "ECNG" (the names of said companies being listed below),[1] filed a proposal with the Atomic Energy Commission, herein referred to as "AEC," looking toward a contract with the commission which is about to be concluded.

The contract is designed to further the purposes of the Power Demonstration Reactor Program established by the AEC for the development and operation of experimental nuclear power reactors.

The specific objective of the project is the development of an advanced high-temperature, gas-cooled, heavy water-moderated 50,000-kilowatt nuclear power plant of the pressure tube type, to be fueled with slightly enriched uranium and to be designed as a prototype of a 200,000-kilowatt nuclear power plant which could operate on natural uranium.

Substantial research and development are considered absolutely necessary if the anticipated potentialities of the project are to be realized. The contract contemplates (1) preoperational research and development to be administered by ECNG, (2) construction of the prototype nuclear power plant by FWCNG, and (3) post-operational research and development to be administered by ECNG in connection with the operation of the prototype plant.

The expenses of preoperational research and development—estimated at $10,195,000 without including any amount for the use of AEC facilities or for the time spent by personnel of ECNG and FWCNG ("administrative and assigned personnel")—will be shared in approximately the following proportions:

ECNG	47½%
FWCNG	2½%
AEC	50 %

[1]Members of ECNG are as follows: Appalachian Power Company; The Cleveland Electric Illuminating Company; Columbus and Southern Ohio Electric Company; The Dayton Power and Light Company; Indiana & Michigan Electric Company; Indianapolis Power & Light Company; Louisville Gas and Electric Company; Monongahela Power Company; Ohio Edison Company; Ohio Power Company; Pennsylvania Power Company; The Potomac Edison Company; Southern Indiana Gas and Electric Company; West Penn Power Company; American Electric Power Service Corporation.

Such preoperational research and development would also entail the use of administrative and assigned personnel, involving estimated additional expenses of $1,915,000 to ECNG and FWCNG, as well as the use of certain AEC facilities at a cost to AEC estimated at $1 million.

UNDER the contract, if preoperational research and development expenses (exclusive of administrative and assigned personnel and of AEC facilities) exceed or are reasonably expected to exceed the estimated $10,195,000, AEC will be authorized unilaterally to increase preoperational expenses by up to 50 per cent thereof. Any such increase ("overrun") would be shared by ECNG, FWCNG, and the AEC in the same proportions as indicated above. The additional expenses to ECNG and FWCNG for the continued services of administrative and assigned personnel incident to an overrun, are estimated in the proposal at $958,000 for a 50 per cent overrun.

The costs of constructing the prototype nuclear power plant (estimated at $25,885,000) would be completely borne by FWCNG; and, on completion, the plant would be owned and operated by FWCNG as a part of their electric utility systems.

Certain conditions will have to be met before FWCNG will be required to proceed with the construction of the prototype nuclear power plant. Construction will, among other things, be contingent on technical and economic feasibility of the reactor and a determination that power from the reactor would not be unreasonably excessive over conventional power in Florida at the time construction is begun.

THE postoperational research and development expenses contemplated by the contract would extend over the first five years of operation of the prototype nuclear power plant. These expenses—estimated at $5 million—would be borne 40 per cent by ECNG and 60 per cent by AEC.

In addition, charges otherwise payable for heavy water and fuel used in the plant to the end of such five-year period would be waived by AEC up to the maximum amounts set forth in the contract.

The General Nuclear Engineering Corporation of Dunedin, Florida, is expected to be the nuclear design agent and nuclear project engineer, and the American Electric Power Service Corporation is expected to be the principal design and construction engineer for the project.

More Profit for Pension Fund Investment?

"COMMON stock (is) the cornerstone of a dynamic pension fund portfolio . . . the attainment of a 6 per cent yield is a reasonable objective," declares Paul L. Howell in a recent (November-December)issue of the *Harvard Business Review*.

The advent of collective bargaining for fringe benefits, rising wages, and lower bond yield demands that pension fund managers explore the advisability of investing pension funds in common stock. The cost impact of retirement benefits will increase appreciably in the next decade owing to higher terminal wages, earlier retirement, and "cost of living" adjustments to the pensioner.

Eleven million workers now rely on private noninsured retirement plans and it is incumbent on managers to provide the best possible use for such funds. Mr. Howell feels that after fifteen years of explosive growth it is time to investigate a "more efficient" use of this business re-

source. The prime considerations of a pension fund manager must be the safety and liquidity of principal; certainty and adequacy of return; capital appreciation; marketability; collateral value; and the tax aspects of the investment.

The majority of the existing retirement plans are aimed at earning 2.5 per cent to 3 per cent—most often by investment in bonds. If an additional 1 per cent could be earned it would increase benefits 25 per cent or cut costs 20 per cent. If these funds could then be invested in a manner which would return 6 per cent, this would make it possible to nearly double benefits or reduce costs correspondingly. Is a 6 per cent return possible?

MR. HOWELL believes that a pension fund should be invested in "diversified professionally selected common stocks. . . . The monumental investigation of the performance of common stocks by the Cowles Commission shows that the achievement of a 6 per cent return over a sustained period is not impossible. On the contrary, the mediocre results of the market averages do *better* than 6 per cent." (The Cowles Commission for Research in Economics conducted an intensive examination of common stocks covering a period just after the Civil War to the mid-1930's.)

"The professional investment analyst, with his training and staff, can provide the type of direction a fund must have to earn its fullest potential. Moreover, such counseling should be retained on a fee basis . . . to avoid conflicts of interest where a commission is at stake."

MR. HOWELL cites the Bell Telephone pension system as an illustration of a conservatively managed pension portfolio. The Bell system has maintained the policy of 100 per cent investment in diversified bonds. The "conservative" policy was drafted during the economically depressed period of 1938. The result of this policy can be seen in the New York Telephone Company (a Bell system subsidiary). Since 1945 this fund has earned an average of 2.77 per cent—a figure substantially less than the yield on its own common stock and less than the average net earnings of insurance companies which pay taxes.

In contrast, the pension fund of the General Electric Company has, over the years, varied its investments to keep pace with changing economic conditions. In 1927 the assets of the pension trust were invested in notes of the Electrical Securities Corporation. Twenty years later the fund was invested in government bonds. In 1947 policy was again altered to permit investments in corporate bonds, mortgages, and preferred stock. Nineteen fifty brought the decision to purchase common stock, on a dollar-averaging basis.

"The reasons stated for following a stock purchase program were: (a) to secure a higher yield, and (b) to set up a hedge against inflation. A higher yield offered the advantage, of course, of reducing the funding cost of the plan. Prior to 1950 it had sometimes been difficult to obtain a 2½ per cent rate to meet the actuarial requirements."

THE possibility of decreased dividends during a period of economic depression has been given careful study. It has been determined that with 30 per cent of the fund in common stocks, dividends might be reduced 40 per cent (below the average 5 per cent rate) before the fund would earn less than 3 per cent.

"Although the past is no sure guide for the future, the experience of the GE fund to date has been most favorable. A conservatively enterprising investment policy

has been followed. A modest portion of common stock has assisted in increasing the net yield and has augmented its value with substantial capital gains. The important thing is that the management has adopted a dynamic adaptable investment policy for our changing world."

A THIRD type of pension fund investment program has received much interest since the end of World War II. This is the "variable annuity" investment plan. Unlike other plans these funds are invested wholly in equities. TVA and the Wisconsin State Employees Retirement Fund have adopted this policy. No matter what plans of this type may produce in the future, they have already created a substantial amount of capital appreciation to cushion any future market decline.

Mr. Howell points out that investment policies of union pension funds are "noteworthy for their extreme conservatism and poor investment performance." An example of this "conservative" attitude and "lack of alert management" is the Amalgamated Clothing Workers Union which permits 15 per cent of its fund to remain in "idle cash."

Mr. Howell makes a strong case for pension funds which invest in a "diversified list of common stocks, professionally selected," producing, over the years, "substantially greater" financial gains than a bond fund.

—C. M. B.

A Good Prophet May Have Honor but No Profit

". . . the admiration of the American people for achievement in any field is obvious and cannot be gainsaid. Our paradox lies in the fact that, when the rewards of achievement are paid in dollars rather than in honors or cheers, we say 'no, no!' and tax most of them away. We admire success, but penalize the successful; we admire talent, but penalize the talented; we admire initiative, yet penalize the initiator; we admire leadership, yet we penalize our leaders. Cheers and applause, yes! Financial reward, no!

"For a dozen years or so, we have somehow rationalized the strange thesis that minority rights applicable to the talented and successful could, if their compensation were financial, be safely abrogated. I am afraid that the issue has been drawn too often along political rather than moral lines. Politically, the talented and successful people of America—despite their public appeal—represent a minority group with few champions. As a result the evil of confiscatory taxes has, like vice, been first endured and ultimately embraced regardless of the wrong it imposes, regardless of the threat it poses to the future.

"Too little thought has been given, I am afraid, to the moral implications of taxing away 90 per cent of one man's earnings to make another's burden seem less unpalatable. If there is any equity at all in this approach, I have yet to hear anyone venture to expound it and I suspect that few would relish the rôle in which espousal would cast them."

—CRAWFORD H. GREENEWALT,
President, E. I. du Pont de Nemours & Company, Inc. In his book "The Uncommon Man."

The March of Events

Electric Manufacturers Warn Of Foreign Purchases

THE case for domestic purchases of TVA power equipment was made by the national security committee of the National Electrical Manufacturers Association in a press conference in Washington, D. C., on March 12th. It was there asserted that national security was the key issue with which NEMA was concerned in the recent award by TVA of a $13 million steam turbine generator contract to a British company. The committee felt that this particular award was part of a trend that had begun in 1953.

The NEMA committee admitted that, if all federal purchases of heavy electrical power equipment were constantly bought on a low-dollar bid basis over a period of ten years, 50 per cent of such equipment used by the government would be of foreign manufacture. National security would be endangered by such a development, the committee pointed out, because in time of emergency these alien products could be sabotaged or knocked out without provision for repairs. It was noted that repair services are not maintained in the United States by foreign manufacturers.

The committee also contended that the price difference between foreign bids and those of U. S. companies might not be so far apart from the government's standpoint when the 52 per cent corporation taxes are considered, as well as the income taxes produced by the jobs created when government contracts go to American industry.

Refunds Almost $39 Million

IN settlement of its first three rate increases covering the period from January 1, 1954, through February 4, 1958, Colorado Interstate Gas Company has refunded $38,957,125.69 in principal and interest to all its resale customers. This took place March 17th in New York, Chicago, and Colorado Springs. There were 12 companies involved.

This transaction was in accordance with a rate settlement agreement made between Interstate and its customers which was approved by the Federal Power Commission last December. Largest single check was issued to Public Service Company of Colorado, which received a total of $15,780,418.27. The second largest refund went to Natural Gas Pipeline Company of America which was for $10,561,041.72, including principal and interest.

Completion of this refund operation by Interstate leaves only one of the company's rate cases still unsettled. An offer to its customers in settlement of this increase, which became effective February 5, 1958, was made by Interstate on January 30th.

Alaska

Utility Regulatory Bill

A BILL to create a public service commission has been introduced in the new state legislature. Modeled largely after the Indiana Public Service Commission law, the bill would create a five-man commission, members of which would be appointed by the governor.

The Alaska commission envisioned would have jurisdiction to regulate all types of utilities, including gas, electric, communications, and transportation carriers.

Another legislative proposal would establish procedures and fees for co-operatives operating within the state.

California

Gas Rate Rise Asked

PACIFIC GAS AND ELECTRIC COMPANY has applied to the California Public Utilities Commission for authorization to increase gas rates to offset the higher cost of gas it will buy from El Paso Natural Gas Company under rates which will go into effect not later than August 1st. The higher rates that El Paso will put into effect total $12,976,000 more in operating costs for PG&E. Its application to the commission calls for new rates that would produce $12,927,000 to offset this.

In terms of the average domestic customer, the increase, if granted, would amount to slightly less than 40 cents a month. PG&E proposes an across-the-board increase at the rate of 4.95 cents per thousand cubic feet of gas sold to all firm customers and to interruptible customers for sales up to 10 million cubic feet per month.

Even with the new higher rates in effect, the rate of return on the PG&E gas department's depreciated rate base would be 5.87 per cent, a figure well below the 6.52 per cent rate of return which the commission authorized on July 9, 1958.

Illinois

To Refund $4 Million

WITHIN the next three or four months, the Peoples Gas Light & Coke Company of Chicago will pass on to its customers about $4 million in refunds. This amount will be received by Peoples Gas Company from Natural Gas Pipeline Company of America, a subsidiary and supplier. The refunds which Peoples will give to its individual customers will take the form of credits on future gas bills.

The money that Peoples Gas will return to its customers represents its portion of about $9 million, plus interest, which Natural Gas Pipeline received March 17, 1959, from one of its suppliers, Colorado Interstate Gas Company.

Last fall Peoples Gas also made refunds to its Chicago customers of approximately $5,650,000.

Kentucky

Seek Boost in Rates

COLUMBIA GAS OF KENTUCKY and Union Light, Heat & Power Company have asked the public service commission for permission to raise their rates to meet increased costs of wholesale gas. Both companies buy their gas from Ken-

tucky Gas Transmission Company, which has sought authority to put higher rates into effect on April 2nd and May 15th.

The overall increase asked by Columbia Gas would amount to $183,400 a year or 4.2 cents per thousand cubic feet of gas, in the Ashland district. In the company's Lexington district the increase would total $428,900 a year, or 4.2 cents per thousand cubic feet of gas.

Union Light, which serves northern Kentucky, wants an increase amounting to $429,791 yearly or slightly more than four cents per thousand cubic feet.

Now pending is a case involving the gas supplier of Kentucky Gas, Tennessee Gas Transmission Company, whose increase in rates is presently before the Federal Power Commission.

If the higher rates of Columbia Gas and Union Light, Heat & Power are approved, they will be subject to refunds to customers based on final action in the Tennessee Gas case.

Michigan

Obtains Canadian Gas

THE Michigan Wisconsin Pipe Line Company, a subsidiary of the American Natural Gas Company, has signed a contract with Midwestern Gas Transmission Company for the purchase of 158 million cubic feet of gas daily. The gas will be imported into the United States from Trans-Canada Pipe Lines, Ltd. The contract, however, must be approved by the Federal Power Commission and not only for the importation of the Canadian gas supply, but for construction of facilities by Michigan Wisconsin and Midwestern which will cost a total of approximately $95 million. The agreement also requires Trans-Canada to obtain approval of Canadian authorities for the exportation of the gas.

The additional supplies of gas to Michigan Wisconsin will supplement gas which the pipeline now receives from Texas, Oklahoma, and Louisiana.

It will enable the pipeline to expand service to its existing customers, facilitate service to 29 communities in northern and central Wisconsin which do not now have natural gas, and extend its facilities into the western portion of the Upper Peninsula of Michigan.

Under its contract with Trans-Canada, Midwestern has the right to purchase an additional 200 million cubic feet of gas a day when it becomes available for export to the United States.

New Mexico

Highway Relocation Legislation

A HIGHWAY relocation bill which provides for the use of state and federal funds to reimburse public utilities for the relocation of their facilities where necessitated by interstate highway construction has been passed by the state legislature. An amendment to the measure eliminates state responsibility for moving utility lines for primary road construction not in the interstate system.

The bill is similar to one enacted in 1957, but subsequently declared unconstitutional by the state supreme court. The new proposal seeks to overcome the court's objections by preventing the utility from making any profit from relocation.

The state high court previously held that the 1957 bill was unconstitutional be-

cause it violated the ban against public payments of benefits to private interests. A companion measure to allow the state to reimburse cities for relocation of municipal utility lines also won approval of the New Mexico legislature.

New York

Picketing Bill Passed

THE assembly of the state legislature has passed a bill which would curb organizational picketing. This is a form of picketing by which unions may put pressure on nonunion employers where no dispute exists with their nonunion employees. Its purpose is to promote union organizations in nonunion shops.

The new bill does not outlaw organizational picketing, but it does amend the Civil Practices Act to remove it from the definition of a labor dispute. This permits employers to seek injunctive relief.

Texas

Vote Favors a PUC

THE results of a poll of Texas cities by the Texas Municipal League showed 98 cities in favor of a bill proposed by Houston Representative William W. Kilgarlin to create a public utilities commission for the state. Eighty-four cities opposed the proposal and 11 cities had no opinion.

In view of the fact that the vote was not a decisive two-thirds majority for the bill, the league would neither endorse nor oppose the measure, according to its president, Louie Welch. However, he did say that this position did not rule out active support or opposition by individual cities.

The league's committee made some suggested amendments to the bill.

West Virginia

Rate Rise Cut 40 Per Cent

THE West Virginia Public Service Commission has cut a proposed rate increase of the United Fuel Gas Company about 40 per cent. In its application filed nineteen months ago the company asked for rate boosts that would yield $4,067,000 annually in new revenues. Of this amount the commission granted $2,432,636. On December 17, 1957, by operation of law the full amount of the $4 million increase went into effect under bond. Now the company must refund the reduction ordered by the commission. United Fuel had petitioned the commission for a rehearing in the case but the request was denied. The company has decided to abandon an appeal to the state supreme court.

(For an analysis of legal points decided, see *post* page 588.)

The decision of the commission means refunds for the company's 115,000 customers in southern West Virginia who had been paying a higher rate for fourteen months. The end result is that each customer on an average will continue to pay 18.04 per cent more than he was paying before the rates went into effect fourteen months ago. Had the commission approved the company's entire request, customers would have continued to pay 29.59 per cent more.

The new rate scale is designed to bring the company a 6.3 per cent return on its investment compared with a requested 6.75 per cent.

Progress of Regulation

Trends and Topics

Extension of Electric Service without Authorization

THE growth of co-operatives, in addition to municipal plants, has resulted in conflicts between regulated and unregulated utilities and required commission decisions on conflicting rights in adjoining areas. One question is whether one utility or another should be authorized to serve. Another question relates to the right of a prospective customer to demand service from one utility or the other. The question here discussed is whether a certificate of convenience and necessity must be obtained before making an extension or taking on a new customer.

General Rule As to Certificate Requirement

Electric companies subject to commission regulation are ordinarily denied the right to extend lines into new territory without obtaining permission from the commission. The Missouri supreme court, for example, stated in one case that a reasonable construction of the law forced the conclusion that it was the intention of the legislature to clothe the commission with exclusive authority to determine whether or not the furnishing of electricity to a given town or community was a public necessity or necessary for public convenience. Then, if expansion is found to be necessary, the commission is to prescribe safe, efficient, and adequate property, equipment, and appliances in order to furnish adequate service at reasonable rates and at the same time safeguard the lives and property of the general public. The court said that if an electric corporation having a certificate to operate its plant in a given town or community might extend its lines to and furnish other communities without a certificate, the purpose of the statute would be defeated (PUR1931A 32).

Protection of Area Served by Unregulated Utility

The fact that one of the utilities is a municipal plant or co-operative free from commission regulation apparently does not free an electric company from the necessity of securing authorization for an extension into the area occupied

by the unregulated utility. This was illustrated in a Delaware case where Delaware Power & Light Company proposed to serve an Air Force base located several miles from the city of Dover, as well as other customers surrounding the base. The city of Dover complained that this would adversely affect municipal plant operations by depriving it of a large customer. It was argued that the new territory was contiguous to territory served by the company and not previously served by a public utility of like character.

The court disagreed with the contention that the certificate requirement for service to contiguous territory applied only to regulated utilities and that the words "like character" in the statute referred to another utility subject to regulation. The court concluded that the electric company must obtain a certificate before extending service into contiguous territory served by a municipal plant but outside the municipal limits (1 PUR3d 408).

Company's Right to Extend Service Upheld

A recent decision by the North Dakota supreme court deals with the question of extensions which are not of such a nature as to require certification. The Otter Tail Power Company has been supplying service in the vicinity of Tower township and Buffalo township for a great many years. Cass County Electric Co-operative, by virtue of special consideration given by statute to co-operatives, was permitted to enter the territory served by the company without the necessity of securing a certificate. In 1954 the Standard Oil Company constructed a microwave station near a point where the co-operative had a distribution line and the company had a transmission line. Standard Oil sought service from the company because it rendered three-phase service, while the co-operative line was single phase. The company agreed to render service, and it constructed facilities for that purpose.

The co-operative complained that this constituted an illegal extension without obtaining a certificate. The court said it was necessary to keep in mind that the fact that the point in question might be in territory served by another supplier of electric power, though it might have some bearing upon the question, was not necessarily determinative. The court held that territory served in rural areas includes that within a reasonable distance of existing distribution lines or substations. What is reasonable depends upon the circumstances of each case. The customer had the right to choose which service he wanted. The complaint of the co-operative was dismissed (26 PUR3d 536).

The North Dakota supreme court had previously upheld a commission order dismissing a complaint by a co-operative against an electric company for alleged unlawful extensions of service where there was no evidence to show that facilities furnished by the company interfered unreasonably with the service or system of the co-operative. The extension was held to be proper under a statute exempting from certificate requirements an extension into territory contiguous to that already occupied and not receiving similar service from another utility, or electric co-operative, or if no certificate of public convenience and necessity has been issued to any other public utility (17 PUR3d 27).

The North Dakota commission, in an earlier case, stated the rule that a power company is not required to obtain a certificate to extend service within a district in which the company has lawfully commenced operations, even though it results in competition with a rural electric co-operative. Construction of an extension to serve a residence from a transmission line running between two cities was not considered an unreasonable interference with co-operative operations where the co-operative was already serving several nonfarm customers in the same area. There was no evidence of the nature of alleged interference (3 PUR3d 347).

The North Dakota commission once held that construction of a substation by an electric company on an existing transmission line to serve a new customer who took delivery at that point did not constitute an extension of an existing utility plant or system so as to require the issuance of a certificate (90 PUR NS 266).

The Missouri commission dismissed a complaint by a co-operative against an electric company's construction of a transmission line into territory in which it was not certificated. The commission recognized the right of the co-operative to complain but noted that it was not subject to commission jurisdiction and could not be required to render service. The commission was of the opinion that the company had a right to make connections from an electric line authorized by the commission, for reasonable distances and reasonable purposes in order to serve customers, without obtaining any additional authority. The distance in this case was approximately $2\frac{1}{2}$ miles. There was a need for the service, and the company had been requested to render service and was in a position to do so. The complaint was dismissed, although the commission qualified its action by stating that, under the facts disclosed, if the company had erroneously exceeded its authority the commission would be inclined to grant the authority without an additional hearing (16 PUR3d 484).

The Kentucky commission dismissed a complaint by a co-operative against a service extension into its territory where neither party had applied for or received authority and service could have been supplied by either party. There was no duplication either in the sense of parallel facilities or excessive investment in relation to efficiency or an unnecessary multiplicity of physical property. Construction would lend itself to looping with other company lines, permitting better service. Customer preference, said the commission, should be given consideration where two utilities seek to serve the same area. The commission commented that ordinarily an electric extension of 850 feet does not require a certificate, although application should be made where another utility is in the immediate territory and there is a possibility that a conflict will arise (100 PUR NS 27).

The Wisconsin commission held that an electric company was not required to obtain further authority for construction of a portion of an electric line which was within a town where the company was authorized to operate, but that authority was required for extension of the line in other towns where the company did not have facilities and did not operate or render service. The commission also decided that public convenience and necessity did not require

duplicated electric facilities, and that the company's line extension along a highway where co-operative lines extended was undesirable. The commission granted a certificate for operation in certain areas but denied part of the company's application (20 PUR NS 496).

Clarification of Operating Rights

An electric company which had obtained a certificate authorizing service in described areas, according to the Colorado commission, was entitled to extend its facilities into contiguous areas not served by a public utility of like character without obtaining a certificate. The company had applied for orders clarifying and making definite and certain the territory which the company was authorized to serve. The commission entered an order confirming and approving extensions into areas and territories contiguous to towns where the company was rendering service. There was said to be no apparent reason why the commission, in a proper case, should not clarify and confirm rights under certificates to serve territories contiguous to towns a company had been authorized to serve (57 PUR NS 497).

Review of Current Cases

Nuclear Power Plant Financing Program Approved

THE Massachusetts commission, after noting the desirability of practical research in generating electricity from nuclear reactors, approved the proposed financing program of the Yankee Atomic Electric Company, jointly owned by a number of other electric companies.

Departure from Rule

The company's present resources consisted of the proceeds of $13 million aggregate par value of common stock, which had been purchased for cash at par by the stockholder utilities. The company proposed to finance the balance of its estimated capital requirements by the issuance of an additional $7 million of common stock to its stockholder utilities and by the issuance of $20 million in first mortgage bonds and bank borrowings up to $17 million.

The proposal departed from the commission's requirement that new construction by gas or electric utilities subject to its jurisdiction first be financed by short-term borrowings and thereafter refunded by the issuance of permanent securities after examination by the accounting division and engineering division to ascertain that all claimed expenditures were represented by proper additions to utility plant and property. The commission pointed out that Yankee was a newly formed utility with no present source of income and no established credit rating. It had no completed plant investment and was engaged in building a new type of power plant. Under the circumstances, a departure from the general rule was necessary, and the issuance of the additional stock in advance of actual expenditures for plant additions was authorized.

The capitalization ratios involved in the proposed financing program were approved by the commission, which thought it appropriate to take into consideration

the experimental nature of the plant and the desirability of rapid amortization of the initial capital costs in view of future advances that might be anticipated in nuclear power technology. The proposed notes would evidence bank borrowings maturing in less than ten years from the date of issue and within six years from the plant completion date, and would be amortized by serial maturities. The overall debt ratio would not be a permanent feature but would decline in future years as the bonds and notes were retired.

Competitive Bidding

The commission felt justified in exempting the bond issue from competitive bidding requirements. A suitable financing program, it said, could not have been arranged by means of competitive bidding, and there was doubt whether securities of an untried venture could be placed other than with institutional investors with adequate resources to follow the course of the project with considerable care throughout the construction program and during the early years of experimental operation. The interest rates for the bonds and bank borrowing appeared to be reasonable.

Power Contracts

The commission approved the proposed power contracts which, by adopting a cost-of-service approach, expressly recognize the possibility of future reductions in cost and automatically pass on the benefit of such reductions to the purchasing companies.

The contracts were for a 20-year term and provided for payments by the purchasing companies at the rate of 10 mills per kilowatt-hour during the period of test operations and thereafter at a rate computed at a cost-of-service formula, based on actual cost as experienced, and including a return on investment equal to 5 per cent of the net plant rate base. Proposed research agreements, also based on a cost-of-service formula, were approved.

The transmission contract called for delivery of electricity by Yankee to a certain site, and transmission, under a joint arrangement, by the purchasing companies themselves, which would assign a uniform charge for transmission to each kilowatt-hour of Yankee output regardless of ultimate delivery points.

The state commission was satisfied that it was an appropriate arrangement under the circumstances of the case and that the basis of the proposed charges was reasonable. *Re Yankee Atomic Electric Co. et al. DPU 12802, February 16, 1959.*

Commission Lacks Power to Regulate Indebtedness Of Membership Corporations

THE Indiana appellate court was unable to uphold the state commission in its assertion of jurisdiction over rural electric membership corporations with respect to their incurring indebtedness. The commission had issued an ex parte order requiring membership corporations to secure commission approval before incurring indebtedness or encumbering their property.

The court held the order to be of no force or effect.

Finality of Order

The commission contended that the ex parte order was not final and was, therefore, not subject to review. It argued that the order was merely a statement of policy for the guidance of the membership corporations. Disagreeing with this view, the

court interpreted the order as "an initial and integral step in a regulatory scheme," constituting an unequivocal assertion of jurisdiction over the subject corporations' power to create indebtedness. The order was, then, a final order subject to review.

Final orders of an administrative agency must be subject to judicial review in order to meet the requirements of due process, said the court. Such review is necessary to the end that there may be an adjudication by a court that the agency has acted within the scope of its powers and that its determination comports with the law applicable to the facts found.

Lack of Statutory Authority

The state's Rural Electric Membership Corporation Act clearly gives membership corporations the power to incur indebtedness and encumber their property. While the commission has jurisdiction over the rates which membership corporations may charge, and the territory they may serve, the court could find no statutory provision granting the commission power to regulate membership corporations' indebtedness. *Boone County Rural Electric Membership Corp. et al. v. Indiana Pub. Service Commission et al. 155 NE2d 149.*

Electric Company Not Liable for Discontinuance Damage

THE District of Columbia municipal court of appeals affirmed a judgment dismissing an action by an electric company customer for damage to her house resulting from discontinuance of service. The court held that the customer, who had requested service, was bound by operation of law to comply with a company rule requiring a deposit, and could not complain of the utility's action in disconnecting her service in accordance with such rule, after notice, upon her failure to make the required deposit.

Rules and regulations adopted by a utility, filed with and approved by the commission, enter into any contract made with the utility, and are binding on both the customer and the utility. Actual knowledge thereof or assent is legally immaterial.

Approval by the commission is conclusive on the question of a utility's right to adopt a rule and its reasonableness.

In the absence of a positive tort, pointed out the court, a utility's right to discontinue service for failure to comply with a rule is unaffected by the fact that such an act will result in a foreseeable danger and damage to person or property. The plaintiff had contended that abnormally cold weather conditions were prevailing at the time the service was discontinued, and the company should have been aware that there was a probability of increased danger to the house if the electricity was shut off. Therefore, the plantiff argued, the company was liable for resulting damages.

Notice Sufficient

The court held that the evidence sustained a finding that the customer had received the required five days' notice. There had been testimony that a disconnect notice had been sent out, and not returned to the company. Even though the utility had not introduced evidence showing that notice was sent to the customer with the proper postage and address on the envelope, the court found that proper notice had been given.

Alternatively, the company had argued that whether the customer received the notice or not, she knew from the rules that

a deposit was required, and that service would be shut off if she did not furnish the deposit. The court considered this position untenable, commenting that the utility was required to comply with its own rule requiring five days' notice.

No Estoppel

The customer contended that the company was estopped by delay from exercising its discontinuance right. The evidence had shown that the company had sent a letter to the customer stating that service would be disconnected within five days if she did not make the required deposit, and had not disconnected the service until a month later. The court held that the delay was not excessive so as to work an estoppel on the theory that the delay in exercising its rights was such as to lead the customer to believe the electricity would continue to be furnished without the deposit. *Cullinane et al. v. Potomac Electric Power Co. 147 A2d 768.*

Rate Base Method Held Not Essential in Natural Gas Producer Rate Case

IN passing upon natural gas producer rates, the Federal Power Commission need not require the use of the conventional rate base method as a basis of comparison or point of departure, unless such method is the only way by which the commission can determine whether rates are just and reasonable, declared the United States court of appeals for the fifth circuit.

The commission had held that the rate base method was essential, citing the City of Detroit decision (11 PUR3d 113), handed down by the court of appeals for the District of Columbia. In deciding the instant case, the court apparently ignored the City of Detroit decision. It noted, however, that it had previously indicated its position on the use of this rate-making method in the Bel Oil opinion (24 PUR3d 512). Of interest, also, is the fact that in the Pan American Petroleum case (23 PUR3d 176), the commission found adequate proof of the reasonableness of producer rates without the use of the rate base formula.

The court indicated that neither the commission nor the producer "should be baffled or handicapped in this new field of regulation by any formulas by whatever name they are known."

Burden of Proof

Forest Oil Corporation, the appellant, sought to put into effect a contract price change from about 9.8 cents to 17 cents per Mcf. The principal question presented to the commission, and to the court on appeal, concerned the kind of proof necessary to establish a prima facie case that the proposed rate was just and reasonable.

The court held here, as it did in the Bel Oil decision, that proof that the proposed rate was not higher than the going field price of gas from the same or adjacent areas, even when coupled with factually unsupported conclusional testimony that this particular price was required to provide the incentive needed to encourage exploration and development, was not enough to constitute prima facie proof of reasonableness. On this point, the court affirmed the commission's ruling that the producer had not sustained its burden of proof.

Fair Return on Investment

Natural gas producer rate making must

allow for the cost to the producer of his interest in the gas in place, the cost of facilities necessary to bring the stream of gas into production, and a fair return on these items of cost, the court indicated. In addition, an increment known as the cost of exploration and development must be allowed. This represents the cost of finding potential fields as well as the necessary drilling of dry wells.

A fair return on the investment must be allowed. This includes an amount necessary to amortize the cost of plant over its useful life and an amount representing interest or earnings on this cost. To this an amount must be added to attract capital.

If the commission finds that a proposed producer rate is reasonable to the consuming public, it need not reject the rate as not being just and reasonable merely because it will yield more to a particular producer than the very minimum required by constitutional standards, or more by way of net yield than is returned to another producer in the same well or field. Particularly is this true, said the court, if the result follows from a considered decision by the commission that a uniform price for all the producers in a single well or field is not only reasonable but also desirable for convenience of administration.

Reopening for Additional Evidence

In view of the producer's motion for an opportunity to offer additional evidence following the commission's decision in the Bel Oil and other cases, the court thought that justice required that the proceeding be remanded to the commission for the taking of additional testimony. The court observed that the commission may consider any evidence that will aid it in determining the reasonableness of the proposed rate. *Forest Oil Corp. et al. v. Federal Power Commission, No. 16844, February 20, 1959.*

Rate Increase Based on Fair Value and Deferred Income Taxes Considered

THE Illinois commission approved increased gas rates which would produce a return of 5.9 per cent on a fair value rate base. In ascertaining fair value the commission considered current economic conditions, price levels, reproduction cost, original cost of construction, the amount expended in permanent improvements, and the probable earning capacity of the property.

Stand-by Gas Facilities

Whether or not certain oil-gas facilities should be considered used and useful property, and thus included in the fair value determination, was a hotly contested issue. The commission concluded that one of the plants, which the company had been authorized to sell, should be excluded from the fair value rate base determination.

Two remaining plants, useful as emergency or stand-by facilities in peak-shaving operations, and also found necessary for furnishing space-heating service to present and prospective customers, should not be excluded from the rate base. Although the commission held that such facilities could not be included at the reproduction or present-day estimates of the cost of reproducing the plants, a proper evaluation had to be taken into account in the determination of the overall fair value.

Supplemental Depreciation Reserve

In considering original cost less depreciation, the commission recognized that only the balance remaining in the "Commission Reserve" could be deducted from

the original cost. A "Supplemental Reserve," not recognized by the commission for rate-making purposes, could not be deducted. Likewise, the amount of annual depreciation to be allowed could be determined only by applying the composite remaining life expectancy against the original cost of utility plant after deducting only the "Commission Reserve."

Appliance Merchandising

Branch offices were used for the promotion and sale of gas and to provide a place for customers to pay their gas bills and to request service. Consequently, the cost of maintaining them was a justifiable expense. The fact that the offices were also used for the display, sale, and demonstration of modern appliances did not bar an expense allowance. On the contrary, said the commission, the sale of new appliances adds to the convenience afforded the public. Appliance operations are a proper part of sales promotion activities.

Coke-oven Plant Acreage

An area of approximately 80 acres had previously been used by the company for coke-oven plant operations. Sixty-five acres of the tract were presently in use or needed for future use by the company. The balance of 15 acres represented an island formerly used for the storage of coal and coke which could not be sold or leased without permitting access over land presently used by the company.

The company had developed a number of tentative proposals for the use of such land, including construction of centrally located shops, garages, and other facilities. Because of a recently enacted zoning ordinance, there was little remaining land within the city which could be dedicated to future gas plant construction and operation.

The commission held that the site was "used and useful" and thus includable in the fair value determination.

Reproduction Cost

The commission stated that it adhered to the practice of not considering so-called spot prices without reservation or considering trended original cost as more than confirmatory of reproduction cost.

In determining the current fair market value of land for rate-making purposes, the commission saw no reason for including acquisition cost and interest during construction.

Construction work in progress, however, was included because the company had not charged interest during construction as permitted by the Uniform System of Accounts. Replacement construction of utility property is made to serve customers just as much as new construction, the commission said, and since revenues derived from both types of construction help to defray the cost of service, both should obviously be included in the rate base.

Working Capital

An allowance for working capital was made despite an objection that tax accruals and customers' deposits more than offset the amount needed. With respect to tax accruals, the commission did not believe it a sound policy to insist that management invest amounts set aside for federal, state, municipal, and other taxes. As to customers' deposits, there appeared to be such a seasonal fluctuation in the amount of moneys advanced by customers that such a source of working capital could not be entirely relied upon.

Deferred Tax Reserve

Interveners had urged that the reserve for deferred taxes resulting from the use of accelerated depreciation for income tax purposes should be deducted from the rate

base. The commission refused to do so, stating that ratepayers, both present and future, receive a benefit from the tax reserve to the extent that the company does not have to obtain such money at a cost to it.

The purpose of the congressional enactment providing for accelerated depreciation would be defeated if utilities were denied the same tax treatment allowed other concerns. To deny the right to earn a return on plant paid for out of funds made available by deferring payment of income taxes would be to work a discrimination not intended by Congress and would defeat its purpose, which is to provide an incentive for plant expansion and improvement, the commission said. *Re Peoples Gas Light & Coke Co. No. 44293, February 11, 1959.*

Sales from Underground Gas Storage Figure In Pipeline "Locked-in" Rates

OVER strong arguments of Michigan Wisconsin Pipe Line Company, the United States court of appeals for the sixth circuit affirmed an order of the Federal Power Commission denying a proposed rate increase from 31.6 cents per Mcf to 32.98 cents, applicable to a 19-month impoundment period from April 1, 1955, to November 15, 1956. The 31.6-cent rate was established in 1954. Effective February 1, 1955, the company had to meet an increase in the cost of purchased gas. It was this cost increase which the company sought to provide for by the proposed increase in its own rate to 32.98 cents. Though this rate went into effect subject to refund, it was finally found to be unreasonable and refunds were ordered.

Test Period

Michigan Wisconsin contended that the actual results of operations for the 19-month period should be used in determining the proper rate level for the impoundment period, even though that period included two summers and only one winter —one strong revenue period and two relatively strong cost periods. The commission used the calendar year 1955 as a test period.

The court sustained this action, observing that the commission is not bound to the use of any single formula or combination of formulae in determining rates. It quoted from the famous Hope Natural Gas case (51 PUR NS 193): "It is not theory but the impact of the rate order which counts. If the total effect of the rate order cannot be said to be unjust and unreasonable, judicial inquiry under the act is at an end."

Actual Sales Volume

The main contention set forth by the company was that the commission had used an abnormal sales volume for the test period, resulting, it was asserted, in a lower rate than the company was entitled to if the normal sales volume for the year had been used. Actual sales during 1955 were used, however. These amounted to 117,066,634 Mcf, including a draw down of nearly six million Mcf from storage fields filled during summer months.

The company pointed out that the designed capacity of the pipeline was 110,595,000 Mcf per year and urged that this figure should have been used as the normal sales volume for the test year. Additional sales from storage, it was said, should be eliminated as an abnormal factor. The company argued that on the average it could not sell more gas per year than the annual delivery capacity of its pipeline and

that while storage operations helped to meet peak requirements they did not add to the total amount of gas transported through the pipeline from supply sources in Texas.

If this case involved the determination of a rate for the indefinite future, said the commission, there would be merit in the company's contention. But this proceeding was not concerned with an average sales volume to be used as a basis for rates to be applied after the impoundment period.

Considering the overall operations of the company, including the use of storage facilities, it does not necessarily follow that sales of gas in a certain year in excess of designed capacity of the pipeline are abnormal in the sense that they must be eliminated in the determination of a proper locked-in rate for the short impounded period, declared the court. The record did not disclose any unusual circumstances in 1955 that would render the actual sales volume in that year abnormal. The court, therefore, sustained the commission's use of actual sales.

Cost of Purchased Gas

The company also urged that the additional revenues which would be realized from the proposed rate increase would merely offset the increased cost of purchased gas. While the court recognized that this might be one approach to the problem, it was not the test of the reasonableness of the commission's order. The record did not show that the company needed the proposed rate increase in order to have the just and reasonable rate to which it was entitled.

The commission's order must be affirmed, said the court, unless the company can show that it is unreasonable in its consequences because the return allowed is insufficient to enable it to meet its expenses of operation, pay interest on its bonds and dividends on its stock, maintain its credit and attract capital, or that it is clearly out of line with the returns on investments in enterprises involving comparable risks. *Michigan Wisconsin Pipe Line Co. v. Federal Power Commission, No. 13,451, February 17, 1959.*

Extended Area Service Denied for Lack of Community of Interest

THE Ohio commission refused to order extended area service between the Mansfield exchange of the Mansfield Telephone Company and the Hayesville area served by an exchange of the Northern Ohio Telephone Company. The community of interest between the Hayesville exchange area and the Mansfield area was not sufficient to warrant extended area service.

A number of Hayesville witnesses urged the need for toll-free service, pointing to their business, social, and civic connections with Mansfield. Many of the witnesses resided only six or eight miles from downtown Mansfield.

Majority Needs Recognized

The commission pointed out that local calling areas should cover the ordinary day-to-day communication requirements of a majority of the subscribers, with toll rates applying to points which most subscribers call only occasionally. If the local calling area is too wide, it causes unwarranted cost to both the telephone utility and the subscriber due to the availability of expensive long-haul facilities used only by a small proportion of the subscribers. Too small a local calling area, on the other hand, curtails the normal use of telephone service because toll rates apply to points which subscribers call frequently.

Extended area service is not a substitute for message toll service but is designed to meet the day-to-day local calling requirements of a majority of the subscribers. Consideration of the community of interest, investment considerations, and subscribers' willingness to pay appropriate rates are some of the factors entering into the establishment of extended area service, it was noted.

Discussing community of interest of telephone subscribers, the commission said:

"In considering the community of interest between exchanges, the amount of the message toll traffic flowing between the exchanges involved should be observed. A calling rate of one or two messages per station per month from a small exchange to a larger exchange would not indicate a strong community of interest; however, if the calling rate were four or five or more per station per month, it would indicate and would be evidence of a calling requirement. The volume of traffic in itself, however, is not enough. The traffic should be analyzed to determine if it is coming from the subscribers as a whole, or whether it represents a high calling rate for a minority of the subscribers. When a high calling rate comes from a relatively few number of subscribers it would appear to be only evidence of their communications requirement, not the communications requirement of the exchange as a whole."

Communications Requirement and Rates

The authority of the commission to require the establishment of extended area service when the needs and convenience of a community demand it has been settled in Ohio (18 PUR3d 31). In the instant case, however, there was no substantial community need shown. Less than 40 per cent of the Hayesville subscribers placed three or more calls per month to the Mansfield area, and approximately 17½ per cent of the subscribers placed over 75 per cent of the calls.

This, however, indicated a lack of a sufficiently strong community of interest of the exchange area as a whole to warrant extended area service. Obviously, in the interest of a sound communications system, every subscriber cannot be connected with the exchange which best fits his personal convenience.

Since, under the policy of the Northern Ohio Telephone Company, rates are graduated on the number of telephones available to a subscriber in his local calling area, extended area service between Mansfield and Hayesville would require an upward adjustment of basic rates in the Hayesville exchange. If extended area service is to be established, a substantial percentage of Hayesville subscribers must be agreeable to higher rates in order to avoid unjust discrimination. *Customers v. Mansfield Teleph. Co. No. 26,472, January 28, 1959.*

Average Original Cost Rate Base Adjusted to Reflect Inflation

THE West Virginia commission approved a natural gas rate increase for United Fuel Gas Company calculated to yield a return of 6.30 per cent. The commission pointed out that in numerous gas rate cases during the past few years it had determined that the fair rate of return should not exceed 6.25 per cent. In those cases, as in this one, the primary basis for determining the fair rate of return had been the cost of money to the parent corporation.

However, the evidence in this case indicated that the cost of money to

United's parent company had increased since those decisions.

Inflation and Tax Factors

Recognizing that the application of rate-making principles is difficult in a period of inflation, the commission said that it must weigh all facts relating to present and prospective cost levels, so that rates will not be obsolete when made effective. If rates should not produce a reasonable return for the period when they are in effect, repeated applications for rate increases may be expected, and frequent rate cases are undesirable in that they are time-consuming, costly to the consumer, disturbing to the public, and a burden on the utility.

The commission pointed out that the public demand for natural gas has increased rapidly. To meet this unprecedented demand, additional supplies of gas have been necessary at substantial increases in cost. Furthermore, the company must pay approximately 52 per cent of its net income as income tax. The commission observed that since under the law the company is entitled to a fair return on its investment after taxes, for each dollar of net revenue it allows to be applied to return, it must increase revenues more than $2, the additional dollar going for taxes.

Rate Base and Attrition

The company argued that the use of an average original cost rate base for the test year would not accurately reflect the plant account at the time of the effective date of the rates because of the so-called "regulatory lag." It argued that a year-end balance of the plant account should be used. The company also argued, as a reason for the use of the year-end balance, that it is constantly replacing portions of its plant and adding new units at costs greatly in excess of the original cost of those parts of the plant now in service.

The commission rejected these arguments, however, and concluded that the year's average original cost rate base was proper. It recognized that the fairness of the method was subject to doubt in a period of inflation. But it noted that the company keeps its books and records in accordance with the Uniform System of Accounts to reflect the actual original cost of all property and that the use of this method facilitates the determination of the rate base. The commission did make a lump sum adjustment to the cost of service, however, to compensate for the inflation in the costs occurring between the end of the test period and the time of the rate order.

Cost Allocation

The commission staff raised a new issue with respect to the classification of underground storage costs. In the last case these costs were classified substantially 50 per cent to demand and 50 per cent to commodity, because storage is used to supply volumes of gas throughout the heating season as well as to meet the peak-day requirements of the company's customers.

In this proceeding, however, the staff recommended a novel theory of classification based on the "heating season" under which the relative requirements of the jurisdictional and nonjurisdictional customers during the heating season would be determined and the underground storage costs would be allocated on that basis without regard to generally accepted demand and commodity classifications.

The evidence showed, however, that underground storage facilities were designed not only to receive gas in the summer for withdrawal during the heating season, but also to provide necessary deliverability on the design peak day to en-

able the company to meet all the requirements of its customers on such peak day after substantial volumes have been withdrawn during the preceding months. Consequently, the commission saw no reason for departing from established methods of classification and allocation, saying that the consistent application of reasonable procedures will greatly shorten and facilitate the disposition of rate cases.

The commission also determined that the demand allocation factor should be determined on the basis of a three-day sustained peak rather than on the basis of a single-day peak. It said that a single-day peak might be subject to variations such as temporary curtailment of purchases by large industrial or wholesale users. It also believed that variations in the temperatures throughout the system could affect the single-day peak. *Re United Fuel Gas Co. Case No. 4597, February 16, 1959.*

Rehearing on Tuscarora Land Decision Denied

THE Federal Power Commission has denied rehearing of its decision that New York Power Authority's proposed taking of 1,300 acres of the Tuscarora nation's reservation would be inconsistent with the purpose for which the reservation was created, within the meaning of § 4(e) of the Federal Power Act. It was proposed to use the land for a reservoir to be constructed in connection with a power project at Niagara Falls.

The Power Authority urged that the commission should have made findings with respect to advantages accruing to the Tuscaroras from the proposed project or with respect to the acquisition of equally desirable substitute lands for the Indians. The commission thought this contention irrelevant since the administrative inquiry, under a remand order from a reviewing court, did not concern alternative project proposals.

In this rehearing proceeding, the Power Authority also sought specific findings as to whether the licensing of certain smaller amounts of Indian land for the project would be consistent with § 4(e). The proper remedy for the Power Authority, said the commission, is to file an amendment to its license, whereby the rights of other parties may be protected.

Participation in Decision

Finally, it was asserted that Commissioner Hussey, one of a majority of three, had improperly participated in the decision that the proposed project was inconsistent with the purpose of the reservation, on the ground he had not heard oral argument. Two commissioners had dissented. Besides pointing out that Commissioner Hussey had read the transcript of the oral argument, the commission observed that there was no requirement of oral argument in this proceeding arising from the Administrative Procedure Act, the Federal Power Act, or the commission's rules. *Re Power Authority of the State of New York, Opinion No. 317-A, Project No. 2216, February 25, 1959.*

Ratepayers Not Required to Service Overcapitalization

THE Kansas commission approved increased rates, as modified, for a gas company, and held that the resulting return of 6.51 per cent on a rate base, representing average plant in service, was within the zone of reasonableness. The commission noted that it had often looked, in the past, to see what return on equity capi-

tal the return on rate base would produce, and to see whether the return was commensurate with the return on other investments having corresponding risks. However, such a check was not appropriate in this case, since 37 per cent of the company's capital was devoted to serving an investment which was entitled to no return.

The commission held that the company was in no position to complain that its return on equity capital did not compare with more soundly financed utilities. The commission was aware that the rate of return on the rate base must, in large part, be used to service the debt capital and preferred stock, because the company had paid so much for the properties, that a large portion of debt capital and preferred stock was devoted to servicing investment in excess of net book value of the properties.

Ratepayers, said the commission, should not be required to service overcapitalization.

They have contributed the proper amount when they have paid a reasonable rate of return on the original cost less depreciation.

Expense Adjustments

The commission allowed, as an operating expense, increased postage rates, notwithstanding that the increase had occurred subsequent to the test period. The expense was definite and ascertainable.

A pension plan was considered to be a matter of a different nature. It had not yet been adopted and the amount, if and when adopted, was not ascertainable. The item was disallowed.

Franchise Taxes

The commission was of the opinion that a city franchise tax which is made a part of the general expense of the company results in discrimination to other cities and to rural areas which either have no tax or a lesser tax. The company was directed to file a tariff to place the burden of such taxes upon the respective customers who received the benefits therefrom. *Re Plateau Nat. Gas Co. Docket No. 56,286-U, February 10, 1959.*

Other Recent Rulings

Circuitous Rail Routes. Pointing to a lack of supporting evidence, the United States district court held erroneous a finding by the Interstate Commerce Commission that two joint rail freight routes were not unduly circuitous even though they were more than twice as long as a direct route proposed to be used instead of the joint routes. *Southern R. Co. et al. v. United States et al. 167 F Supp 747.*

Time Limit for Reparation. The California supreme court annulled a commission order granting reparation to highway subhaulers for underpayments by an overlying carrier pursuant to agreement between the parties, ruling that the statute of limitations on liability arising under contract was applicable even though the underpayments violated statutory minimum rates. *Church v. California Pub. Utilities Commission et al. 333 P2d 321.*

Competition Unimportant. That the issuance of a motor carrier certificate would increase carrier competition was considered of no importance by the Louisiana supreme court where the public need for

the proposed service had been shown. *Faulk-Collier Bonded Warehouse, Inc. et al. v. Louisiana Pub. Service Commission et al. 107 So2d 668.*

Pipeline Expansion. The Federal Power Commission authorized Tennessee Gas Transmission Company to construct new facilities to furnish seller's option service, and also granted temporary authority to provide peak service though the record would not support permanent certification of the latter service. *Re American Louisiana Pipe Line Co. et al. Docket Nos. G-2306 et al. January 28, 1959.*

Abandonment Not Involved. The Federal Power Commission has again held that no abandonment is involved in a joint application by two natural gas producers proposing that a specified service be terminated by one applicant and continued without interruption by the other under the same contractual and rate provisions. *Re Great Lakes Nat. Gas Corp. et al. Docket No. G-13096, February 3, 1959.*

Gas Service Discontinued. The Illinois commission authorized the abandonment of service to fifty-three customers being served along a 20-mile transmission line where reconstruction of a highway would necessitate the relocation of the line at a cost of $4,000 per customer and the gas company proposed to pay for the conversion of such customers' appliances to other fuel. *Re Central Illinois Electric & Gas Co. No. 45151, February 3, 1959.*

Managerial Discretion. The Colorado commission commented that it has not been vested with the right, or the duty, to encroach upon managerial discretion unless it is patently obvious that company policy will result in economic waste. *Re Public Service Co. of Colorado, Application No. 16737, Decision No. 51669, February 4, 1959.*

Railroad Agency Continued. The Wyoming commission denied a railroad's application to discontinue an agency station in an agricultural community of about 1,000 population, in view of evidence of continued need for the station and expectation of a profit in the future. *Re Chicago, B. & Q. R. Co. Docket No. 9347, February 5, 1959.*

Telephone Certificate. The California commission granted a certificate to one of two mutually exclusive telephone applicants upon a showing that the successful applicant's nearby exchange had a community of interest with the proposed exchange and that the extension could be done more economically. *Re Redwood Empire Teleph. System, Decision No. 57988, Application Nos. 40207, 40238, February 9, 1959.*

Working Capital. The Massachusetts commission denied a water company's request for cash working capital where tax accruals, including the tax deferral reserve from accelerated depreciation, provided the funds. *Re Grafton Water Co. DPU 12653, February 11, 1959.*

High Debt Ratio. The North Carolina commission considered a return of 4 per cent on a telephone company's fair value rate base reasonable in the light of the company's 90 per cent debt ratio. *Re Randolph Teleph. Co., Inc. Docket No. P-61, Sub 15, February 26, 1959.*

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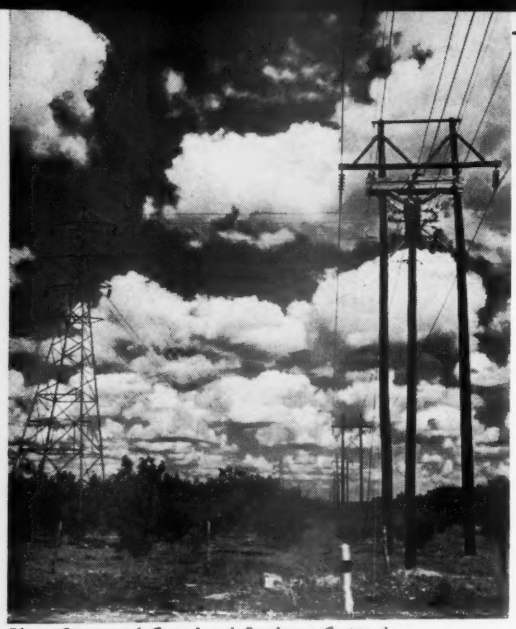

Photo Courtesy of Central and Southwest Corporation

Ceiling Unlimited

FOR POWER GROWT

Inspired by requests for statements as to pr and future programs of their respective comp an impressive total of executives of electric u organizations all over the United States hav thusiastically participated in the following colle of optimistic messages.

FRANCIS X. WELCH, *Editor*

VERY early in the year 1959, it was apparent that the dynamic growth which has characterized the expansion of the electric utility industry since the end of World War II was going to reach new heights of production and sales. Noting that the theme of the annual convention of the Edison Electric Institute—being held earlier than usual this year in New Orleans—is "Electric Power for a Strong America" this Editor decided to tap a new vein of material for this publication.

In an effort to get a line on what the top leadership of the electric utility companies is thinking about, and what is being done and planned during this important period of expansion as well as inflation, letters were written to the various company executives. They were invited to contribute their views and comments about their companies' operations. A broad scope was suggested—present and future construction, plant expansion, developing and balancing load for various customer classifications, merchandising and appliance programs, if any, and any other project, or projects, these top men in the operating field might want to tell us about for publication. The response was spontaneous and impressive.

For one thing, most of these company presidents or other chief executive officers appear not only willing but eager to discuss their plans—thereby reflecting a real enthusiasm for meeting the challenge of serving America's 56,208,491 electric customers better than ever before—notwithstanding sensational growth in demand for more and varied service requirements. As might be anticipated, not all of these company executives take the same approach. Some prefer to review successful programs completed or difficult operating problems solved. Some dwell upon current needs of their customers and what is being done to fill these needs. Others look to the future in terms of specific proposals or special programs already "in the works." Quite a few statements embrace a combination of these viewpoints—past, present and future. Taken together, they add up to a glowing tribute of confidence in the a of the electric utility industry to m the skyrocketing surge in Ame demand for more and more p

Viewed in this light, the follo group of communications from tric company presidents or othe ecutive officials, all but 5 of the ticles prepared exclusively for thi torial presentation, constitute markable unanimity on the part o industry's chief executives. It claims a resolute determination to America growing better and str by providing all the electric needed now and for the indefini ture, plus plenty in reserve. E power supply in the United Sta the whole has never been found ing in the past even under the difficult circumstances of war an nomic stress. It will never be wanting in the future, as these de tions of industrial faith and firm pose plainly reveal.

The sequence of statements fo ing is alphabetical according to pany names:

Alabama Power Company

Birmingham, Alabama
WALTER BOULDIN, *President*

ON January 1, Alabama Power Company had under way the construction of steam and hydroelectric generating projects representing a total investment of $335 million to be made in these and related projects in the period 1958-1968.

The largest construction program ever under way by a single company in Alabama, the projects include the complete development of the power potential on the Coosa river, now partially developed; construction of a large hydroelectric dam and power plant on the Warrior river; in tion of generating facilities in gation dams on that river; and tions to existing steam plants over-all figure does not include tional large investments which be needed for lines and facili

ne v customers and to meet
ded needs of existing custom-
the future. The company also
ty i r cent participation in the
ern Electric Generating Com-
stea plant under construction
Vil nville. This plant, jointly
by Alabama Power Company
eor ia Power Company, will
n u imate capacity of one mil-
low tts.

wit tanding the 1958 reces-
he ompany's gross and net
es gain were at an all-time
for he year. The growth of
nee s in the company's service
urr ntly is at the rate experi-
the past several years—a rate
res ted in approximately dou-
bling the company's generating capacity in the ten-year period just passed. The effects of the 1958 recession were, of course, felt to some extent in the South, but they were not as severe as in some other sections of the nation. The decline in general business activity during the first half of 1958 did not change our long-range plans.

In 1958 there was a greater investment of capital in new and expanded industries in Alabama than in the previous year. The number and kinds of inquiries currently being received by our Industrial Development Department indicate that many types of industry are reactivating their interest in establishing new plants in the South.

Alabama is now an area in which the economy is about evenly divided between agriculture and industry, with the balance currently in favor of industry. This improvement is expected to continue, so that within relatively few years diversified industries, which help stimulate diversification in agriculture, will continue to create additional commercial and professional opportunities. Within a few years, Alabama will reach an ideal balance between industry, commerce, and agriculture.

The company's faith in the continued growth of Alabama is reflected in its construction program.

American Electric Power Company, Inc.

New York, New York
PHILIP SPORN, *President*

RING the unforeseen, 1959 will
e the best year in the history of
nerican Electric Power System.
expect that in 1959 the AEP
n will sell some 26.9-billion
t-hours of electric energy—an
se of 19 per cent over 1958.
eak demand on the System
reach 4,750,000 kilowatts, al-
0 per cent higher than the 1958
f 4,331,000 kw.

ady in 1959, reinforcement of
ve forecasts has come from the
for the weekly System load
mount of energy available for
our customers). At this writ-
e load is running 14 per cent
he comparable period for 1958
uring one recent week, was 19
nt above the same week last
Further, the System peak for
o date is 4,365,000 kw.

expect to be able to fulfill our
ated load increases with no
. During 1958 we added 864,-
of generating capacity, the
amount of capacity ever added
gle year, raising our total Sys-
acity to 5,432,000 kw. In 1959,
add another 675,000 kw—in-
the world's first 450,000-kw
which, after retirements, will
ur capacity to 5,914,000 kw.
, in 1960, a second 450,000-kw
ll go on the line and will give
l capacity of 6,364,000 kw.

cons uction expenditures in
nd 1 0 will be $230-million,
g to $1.46-billion the invest-
new facilities during the 15-
riod 946-1960. In this period
have dded 24 new generating
talin over 5-million kw.

It has been the long-standing objective of the AEP System to provide the more than 5-million people in our area with all the electric power they can use, whenever and wherever they can use it. To do this we promote the utilization of electricity in every possible field: industrial, commercial, farm, institutional, and residential.

One of our activities which covers all of the above fields, but especially the home, is electric space heating—an area where we expect to show considerable gains in 1959 and increasingly better progress in the years beyond that. At the close of 1958, the AEP System was serving 14,266 electrically heated homes including 694 homes provided with the year-round heating and cooling advantages of the heat pump. By the end of 1959, we anticipate that there will be 20,000 electrically heated homes on our lines.

Electric heating is the key to the all-electric home, a concept we have been researching, sponsoring and promoting for almost 25 years. With electric heating, annual consumption of the average home will rise from the 3,800-kwh-per-year level, at which it stood on the AEP System at the close of 1958, to the area of 22,000 to 25,000 kwh. And there is no doubt that

(*Continued on page* 56)

this will come, for it will bring new levels of comfort, convenience, health and good living at relatively moderate cost.

In all of our plans to promote and sell the use of electric power, none is receiving closer attention and emphasis than this.

The year will also be outstanding on the AEP System for the stress that will continue to be placed on research and development in generation—both conventional and nuclear—transmission, distribution, and utilization of electric power.

We expect that this research and development will result in important benefits in the way of permitting the System to improve its operati gin or rate of return. In tu will enable the company t to offer the greatest econon ic to the consumer and to c merit the confidence of th public that is so important if to do the kind of job in he that we have done in the

Baltimore Gas and Electric Company

Baltimore, Maryland
J. THEODORE WOLFE, *President*

BALTIMORE GAS AND ELECTRIC COMPANY spent nearly $40,000,000 for new plant facilities in 1958, of which three-fourths was for new electric property. By the year end, construction work on a second 125,000 kilowatt electric generating unit at the Herbert A. Wagner station was nearly completed, and in January, 1959, this unit was placed in service, bringing the total capacity of the company's steam-electric generating plants to 1,080,000 kilowatts.

Present estimates call for the expenditure of $45,000,000 to $47,000,000 on new construction in 1959, and approximately $270,000,000 in the five-year period extending through 1963. Of the 1959 total, some $15,000,000 will be for new electric generating capacity, including associated transmission facilities, most of which will be initial construction costs of the new Charles P. Crane station. Work was started in December, 1958, on this new steam-electric generating plant east of Baltimore, where the first unit with a rating of 175,000 kilowatts is scheduled for operation in 1961. Expenditures budgeted for the current year also include $22,000,000 for the construction of new and expansion of existing electric substation, transmission and distribution facilities. Approximately $7,000,000 is expected to be used for additions and improvements to gas distribution facilities.

Mid-Maryland, the 2300-square mile territory served by Bal Gas and Electric Company, com a rapidly expanding indu trial mercial, residential and po t are Baltimore the hub. Sinc 19 population of this area h s gr third faster than the natio al a and future growth—in po ulati business expansion—is expe continue at a rate appre iably the national average.

The utility's plans and long programs are designed not o keep its facilities ahead of acce service demands, but to obtain mum benefits of the new busin portunities as well. To this en actively engaged in industrial de ment, using national magazin other media to advertise the "co tive advantages" of a plant loca the Baltimore area. The promo industrial and commercial busi a continuing activity, with exper sales-engineering forces to d new fields of gas and electric and to provide customers the cal assistance needed in applyin services. Programs to promote use of its services by residenti tomers are closely coordinate the activities of appliance d home builders, contractors, di tors and manufacturers to i the number of household app in operation, to upgrade replace and to improve residential wir lighting.

Efforts are being directed t the improvement of annual load factors; i.e., to temper nounced summer peaks on the system which rapidly growing a ditioning loads may create and tain summertime gas business set high winter peaks caused space heating load. To effect th sults, greater sales emphasis placed on electric space heati an active part is being taken gas industry's efforts to develo and improved gas appliances conditioning and refrigeration, up summertime use of that f

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Carolina Power & Light Company

Raleigh, North Carolina

L. V. SUTTON, *President and Chairman of the Board*

E words "build . . . sell . . . ave" characterize company ef- as Carolina Power & Light any ushed into its second half- y o service. The company con- its 50th anniversary celebra- n 19 8 with plant and property 0,0),000 and revenues of $70,- 0. nce World War II, annual es ad increased nearly four

ren plans conform to this h pa tern. Construction calls for 0,0) this year and $125,000,- e in the five years of 1959-

sent projects include a 250,000- powe r generating unit due to be vice in South Carolina by mid- Plant design provides for ulti- capacity of 1,350,000 horse- . Work also is underway to add 00-horsepower generator at our hydroelectric plant on the Pee iver in North Carolina. This s due in service in 1961. Addi- units for sites yet to be selected heduled for 1962 and 1964.

er Efficiency Sought

its continuing quest for maxi- operating efficiency, the com- recently installed an electronic uter and generation controller tomatically load its generating in the best combination to hold costs and line losses to a mini- Now tied to five major plants, omputer also will control the Carolina unit when it is com- It not only loads system plants p op rating economy but it also ates terchanges of power with anies outside the company sys-

g S les Effort

olin Power & Light Company not erchandise appliances but s st port dealers and distribu- A gorous sales program has und taken in the belief that a n c sumer spending will per- appl nce purchases within the any service area approaching 00,( ) in 1959, or eight per cent th 1958. Sales promotion is asiz g both electric house heat- nd conditioning.

e st ngth of the region's econ- s re ected by residential power whic averaged 4,852 kilowatt-hours last year, 43 per cent above the national average.

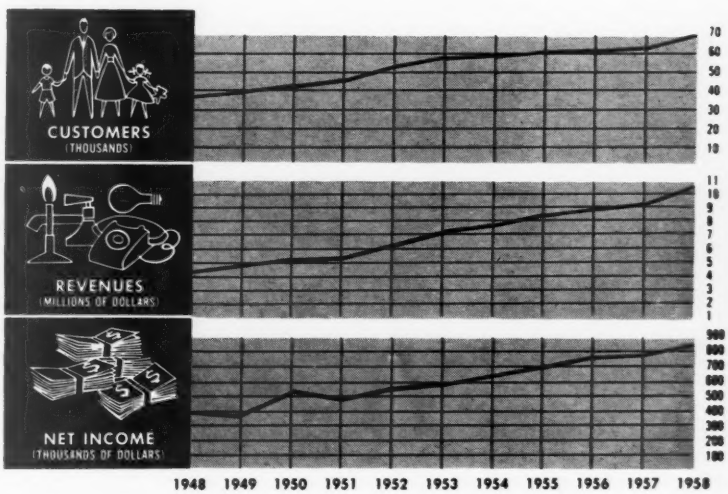
This economy enjoys the company's active support through industrial, urban and rural development programs. Taking a close look at the need for science education, the company is sponsoring delegates to the first national Youth Conference on the Atom.

Substantial headway toward the South's first nuclear-fired power plant is expected this year by the Carolinas Virginia Nuclear Power Associates, in which the company is one of four associated sponsors. This prototype plant is due in service in mid-1962. It will be located at Parr Shoals, S. C., which will be the first site in the nation to combine three energy sources to generate electricity—water power, fossil fuel and nuclear energy.

(*Continued on page* 58)

A Growing Public Utility

California-Pacific Utilities Company operates electric, gas, water and telephone services, one or more of which is provided in 82 communities in California, Oregon, Nevada, Idaho, Wyoming, Utah and Arizona. Since 1950, the population of these seven states has been growing more than twice as fast as the United States as a whole, according to Census Bureau estimates.



Between 1948 and 1958, number of customers increased from 37,237 to 68,333; total revenues from $4,397,878 to $10,491,992; and net income from $392,211 to $882,545; representing increases of 84 per cent in customers, 139 per cent in revenues, and 125 per cent in earnings.

California-Pacific Utilities Company

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Central and South West Corporation

Wilmington, Delaware
GAIL BELDEN, *Vice President*

To meet the increased demands for electricity by customers of the Central and South West System, it is estimated that the four operating companies in the System will expend approximately $73 million for new facilities in 1959. Of the total budgeted for new construction this year, about $32 million will be devoted to generating facilities, $14 million to transmission and $24 million to distribution and miscellaneous items.

Four major generating units, having a total capability of approximately 379,000 kw will be completed and placed in service by the System companies during the first half of 1959. These facilities include a 175,000 kw unit at Lon C. Hill station near Corpus Christi, Texas, a 114,000 kw unit at the Lieberman plant near Shreveport, La., and two units totaling about 90,000 kw which are being built on the properties of West Texas Utilities Company.

During 1959 the efforts of the four operating companies in the System will be energetically directed toward the development of residential sales particular emphasis on electric heating. As an aid in this pro three of the companies have ado reduced rate for winter spa e he The System companies are now ing more than 1,100 centr l uni pumps and a growing num er of forms of electric heating. hrou the area there are const ntly electric homes being built and pects are bright for a rapi ly gr demand for electricity fro this of customers.

Central Hudson Gas & Electric Corporation

Poughkeepsie, New York
ERNEST R. ACKER, *President*

THE major portion of the company's construction expenditures in the electric department in 1959 will continue to be made in connection with the addition of a 138,000 kilowatt unit at its Danskammer Point steam station on the Hudson river near Newburgh, New York. This new unit is scheduled to go into operation in September. The present two units, each of 70,000 kilowatts capacity, last year supplied the bulk of our customers' requirements, and the addition of the 138,000 kilowatt unit will make it possible for the company to generate all of its own capacity requirements and at the same time have sufficient capacity to provide for estimated load growth and reserve requirements through 1962.

The 1958 construction program, the largest in the company's history, resulted in expenditures of more than $18,000,000 in the electric department, of which $12,600,000, or almost 70 per cent, was spent on the new generating unit of the Danskammer station. Estimated construction expenditures for this year include $13,000,000 for electric facilities, of which $7,500,000, or about 57 per cent, is allocated to the completion of the new unit at Danskammer. Balance of the budget covers normal expansion and reinforcement of the electric system.

The company in 1959 expects to continue its sales program alon general lines which have prov effective in the past. The comm and industrial sales represent are concentrating their efforts o encouragement of wider use of trical equipment for lighting, air ditioning, product processing other services. Other members sales force work closely with bu contractors and with appliance equipment dealers to promote th creased use of electricity. All efforts are augmented by the pany's participation in the natio Live Better Electrically, H power, and Medallion Homes grams.

Central Illinois Public Service Company

Springfield, Illinois
M. S. LUTHRINGER, *President*

CENTRAL ILLINOIS PUBLIC SERVICE COMPANY will spend approximately $28,000,000 in 1959 and another $22,000,000 in 1960 on construction and replacement of electric and gas facilities. The two-year total of $50,000,000 will bring expenditures on expansion to more than $226,000,000 since World War II.

A considerable portion of the 1959-60 expenditures will go toward completion of a new 200,000 kw generating unit which is scheduled for operation by mid-1960 at CIPS' Meredosia power station. This unit will bring the total capability of the company's three generating stations to 784,000 kw.

Several major new 138,000 and 69,000 volt transmission lines, along with related facilities, are being constructed. The company's microwave communications network, already the largest of any electric utility in the United States, will be extended to six more operational locations. Installation of telemetering control and alarm signals in several major substations also is scheduled.

CIPS has over a million dollars budgeted in 1959 for sales promotion activities. More than 130 new homes in the company's service area qualified in 1958 for bronze medallions under the Medallion Home program. With the inauguration of a special electric home heating rate in January of this year, there is considerable optimism over the possibilities for many gold medallions being included in 1959 Medallion Home awards.

For the third successive year, the company is advertising the advantage of its service area to industrial pects through national media. The served by CIPS in central and s ern Illinois has experienced a h rate of increase in electric sales dustrial customers than either the of Illinois as a whole or the U.

Kilowatthour sales in the 517 munities CIPS serves with elect have tripled since World War is anticipated that CIPS cust will have a total annual usage billion kilowatthours with n five —almost half again as much as

The company serves 22 towns gas. Total usage in 1958 was than eight times as much as in Therm sales are expected to co to mount, depending upo the ability of this fuel from p peline pliers.

Central Louisiana Electric Company, Inc.

Alexandria, Louisiana
T. M. HAUER, *Vice President*

1958 a 61,000 KW electric generating unit was placed in operation at the Coughlin power station at Landry. The installation of this increased the generating capacity of the company's system to approximately 201,000 kw. During construction work will be started the installation of a 116,000 kw electric generating unit in said plant which is scheduled for completion in 1961. Although this unit will about 88 per cent of the 1958 and it is estimated that it will provide adequate reserves for only three A long-term forecast contemplates the installation of five generating units of 116,000 kw or larger during the 15 year period ending 1973.

The company's program for the 5 year period 1959 through 1963 contemplates construction expenditures of $50,000,000. This includes the installation of the first of the 116,000 kw units mentioned above.

Several years ago the company embarked on a program for the development of its own gas supply of boiler fuel for its electric generating stations and for its gas distribution systems. In this connection, Louisiana Intrastate Gas Corporation was organized as a subsidiary for the purpose of developing a pipe line system to provide such gas requirements. The pipe line subsidiary now operates approximately 580 miles of line extending from Fairbanks in Ouachita Parish to Houma in Terrebonne Parish. The company's program contemplates active development of its gas operations including the pipe line subsidiary and its production subsidiary, South Louisiana Production Company, Inc.

The company is primarily an electric utility and its natural gas operations are largely for the purpose of meeting its own gas requirements. However, it does contemplate the development of industrial business along its pipe line system which is beneficial in achieving a high system load factor by diversification of loads.

The Cincinnati Gas & Electric Company

Cincinnati, Ohio
WM. H. ZIMMER, *Executive Vice President & Treasurer*

MAJOR additions were made to the electric and gas plants during year. Construction expenditures mounted to $30,500,000. Unit No. 4 the Walter C. Beckjord station, having a capacity of 172,000 kw., was placed in commercial service in July 1958. The completion date on Unit No. 6 at the Miami Fort station, also having a capacity of 172,000 Kw., has been deferred until December 1960.

The construction budget for 1959 was revised downward to $31,000,000.

(*Continued on page* 60)

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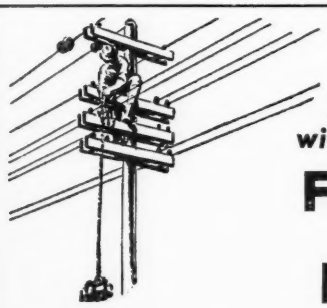

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The Cleveland Electric Illuminating Company

Cleveland, Ohio
ELMER L. LINDSETH, *President*

Northeast Ohio and The Seaway

As this article is being written the St. Lawrence Seaway, scheduled to go into operation early in 1959, is not yet open for traffic. However, it has for some time played an important part in the planning of The Cleveland Electric Illuminating Company.

The area which this utility serves, and which it has long publicized in national advertising as "The Best Location in the Nation," is a 1700-square-mile segment of Northeast Ohio which runs for roughly 100 miles along the southern shore of Lake Erie, from a point just west of Cleveland to the Pennsylvania border. Thus, it parallels the Seaway for its entire length, and consequently stands to gain substantially from the inauguration of this new water trade route.

This region has long been highly industrialized, and is steadily becoming more so. Major industries form its industrial backbone—steel, automotives, chemicals. They are buttressed by many and diversified smaller ones. Of the product classifications listed by the U. S. Department of Commerce, some two-thirds are manufactured in the area.

Much of today's industrial activity has sprung up since World War II, notably the $360-million "Chemical Shore," a complex of chemical plants located on a lakeshore strip which fifteen years ago was mostly open country. All told, over $2 billion has been invested in new and expanded industrial facilities in Northeast Ohio since V-J Day. This expansion is traceable to the area development activities of many businesses, civic groups, and individuals throughout the area, among them The Illuminating Company.

The opening of the St. Lawrence Seaway is expected not only to add impetus to the area's growth, but to contribute to a shift in emphasis. Unquestionably the Seaway will offer transportation advantages to industry, and the Illuminating Company's area development efforts will stress these advantages.

But perhaps more significant is the commercial expansion which the Seaway is expected to bring.

For many years, Cleveland's commercial expansion has lagged behind its industrial growth. However, the new $22-million Illuminating Building in the city's center, completed early in 1958, stimulated a renewal of commercial development. Two additional major office buildings have since been completed, further projects are on the boards, and modernization of existing facilities is going forward at a heightened pace.

Another recent trend in Northeast Ohio is the greatly increased emphasis on scientific and industrial research. Of the area's 330,000 manufacturing workers, almost one in twenty works in a research or development laboratory.

The Illuminating Company's area development planning is oriented toward capitalizing on and further developing these increasingly important elements in the area's economy.

To industry, the company will continue to offer a complete advisory service, including the furnishing of plant sites if required. A promotion feature now in preparation, the latest of several produced by the company in the interests of industrial development, will outline the potential of the "Cleveland Corridor," the broad lake-shore ribbon stretching eastward from the city.

But emphasis will be placed, too, on Cleveland's emergence as a commercial center and a management headquarters, and on the growing amount of research which is turning the area into a national laboratory as well as a fabricating center.

Also, as in the past, much of the company's area development effort will be directed toward improvement of the area itself. The company provides support and leadership to such organizations as The Cleveland Development Foundation, which has as its chief objective the rehabilitation of neglected areas in the central city. Company people are active in many civic and community groups dedicated to the upbuilding of Northeast Ohio, and the company itself is a recognized source of statistics, survey findings and advice.

The potential impact of the Seaway on the area, and on the company, is great. But it will take aggressive action to turn that potential into reality.

The company's area development planning is predicated on this truism. Our plans are aimed, specifically, toward using the Seaway as a means of achieving greater diversification of industry within the area; and generally toward obtaining for Northeast Ohio its full share of the increased business which the Seaway will bring to mid-America.

AMPLE POWER FOR INDUSTRIAL, COMMERCIAL AND AGRICULTURAL EXPANSION IN

SOUTHEASTERN COLORADO

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PIONEER IN PUBLIC SERVICE
SOUTHERN COLORADO POWER COMPANY

115 W. 2nd STREET PUEBLO, COLORADO

Commonwealth Edison Company

Chicago, Illinois
WILLIS GALE, *Chairman*

MON WEALTH EDISON COM-ANY howed increased kilowatt-sales, operating revenues and gs in 1958, Willis Gale, chair-nfor ed stockholders in its an-eport ssued recently.

watt nour sales totaled 19,338,-0, an increase of 0.8 per cent 957, gains of about 5 per cent dent l and commercial sales han ffset a decline of 4.9 per indu strial. The industrial sales , which began during 1957, re-itsel by November, 1958, and two months of the year showed es over the like 1957 months. rating revenues crossed the 00,000 mark for the first time, g $405,116,303, a rise of 6.6 per er 1957.

income was $63,502,223, equal, referred dividends, to $3.28 a on 18,412,661 common shares. ompares with $2.85 a common n 415,243 fewer shares in 1957. greater earnings, despite the ing high costs of doing busi-ere attributable mainly to an e in rates, effective June 19th, r. Gale. Improved operating cy and close control of ex-also contributed to the com-better showing.

ough benefited by the higher rates since June 19th, the 1958 on invested capital was below comparable electric utilities. er, in 1959, with a full year's om the rate increase, the com-opes to achieve further im-ent in this respect even though e continuing at a high level.

cipally because of increased ef-resulting from installation of nera ng units, Mr. Gale said, uel sts decreased by $2,808,-66,7 3,265. He added that con-care ul attention to economy cien y resulted in a reduction 1,40 in other operation and nanc expenses, despite a gen-ge ncrease effective April 1. pro sions exceeded $100,000,-the irst time, taking approxi-25 nts out of each revenue The 1958 total provisions were 3,3 5, compared with $91,-in 1957.

truction expenditures in 1958 58,4 8,388, down $49,264,438 e record of $207,752,826 of

truction expenditures for the four years 1959 through 1962 are estimated at $560,000,000. Of this total, it is now estimated that $400,000,000 will be provided from cash on hand at the end of 1958, internal cash generation during the period, and other sources.

This leaves $160,000,000 to be raised from the sale of additional securities over the four-year period, $20,000,000 of which already has been provided through the sale of debentures in January, 1959.

This estimated $160,000,000 of new financing, according to Mr. Gale, is considerably smaller than has been necessary in recent years. One reason, he said, is that internally generated cash is providing an increasing share of our capital needs. Another is that our construction program is somewhat smaller than it has been. This latter situation, of course, could change markedly.

During 1958 the system's net generating capability was increased by 304,000 kilowatts. Two big new generating units were completed in 1958, while a total of 231,000 kilowatts of older generating equipment was removed from service.

A new 305,000-kilowatt unit is to be placed in service soon at Fisk station in Chicago. In addition, three more new units are under construction. A 305,000-kilowatt unit is scheduled for service at Joliet station this year; the 180,000-kilowatt nuclear unit at Dresden is to be completed in 1960; and a 305,000-kilowatt unit at Crawford station, in Chicago, in 1961.

The report announced that another 305,000-kilowatt unit has just been authorized at Waukegan station for service in 1962, which will bring the system net generating capability to an estimated 5,643,000 kilowatts.

Concerning the promotion of electric space heating, Mr. Gale said that the company expects the number of such installations to rise steadily in the years ahead.

Already well established in milder climates, said Mr. Gale, electric heating is now finding widening application in the company's service area. At the beginning of 1958, there were 138 installations in its territory. The new low rate, coupled with an active promotion campaign, increased the number of installations to 839 at the year end. As of December 31st, an additional 561 installations were in process.

At the end of 1958 there were approximately 146,000 holders of common stock and about 3,000 holders of preferred stock. The number of nonduplicated holders was 147,780, an increase of 400 for the year.

(*Continued on page 62*)

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BOSTON—NEW YORK

Consolidated Edison Company of New York, Inc.

New York, New York
CHARLES E. EBLE, *President*

On the heels of expenditures of $189,000,000 in 1958 for new plant and equipment, Con Edison announced a billion dollars will be spent on construction and expansion over the next five years. About 90 per cent of this amount will be for electric generation, transmission and distribution equipment.

Material evidence of this growth could be seen at the Astoria generating station where excavation for a 340,000 kw unit No. 4 began just four days after the 335,000 kw unit No. 3 went on the line at the station in September of last year.

On Staten Island at the southern tip of the company's territory a 335,000 kw machine, twin to Astoria's No. 3, is rapidly moving toward its scheduled completion this summer. Sixty miles to the north construction is well under way on the Indian Point nuclear power plant due to start operating in the spring of 1961. When the generating equipment presently under construction is completed, the net capability of the Con Edison electric system will be approximately 5,000,000 kilowatts.

The transmission system is being expanded and extended to match the generating capacity. The backbone of the 138 kv underground system now extends from the Millwood connection with Niagara Mohawk in Westchester county to the Arthur Kill station. A bulk power substation in Queens fed from a reinforcement of the 138 kv system sends 69,000 volt feeders across the Queensborough Bridge into Manhattan.

Company plans to finance this expansion have already been set in motion. In February, $59,609,500 of 4 per cent convertible debentures were sold. It is expected that about $625,000,000 in all will be raised by the sale of securities while the remainder of the billion dollars to be spent during the five year period will be generated internally from depreciation and retained earnings.

New York's building boom in office and residential construction and modernization continues to keep company crews busy reinforcing and extending the distribution system. Buildings are being torn down to be replaced by new ones, in most instances many times taller than their predecessors. During 1958, fourteen large office buildings with a net rentable area of 5.7 million square feet were completed, more than twice that number of buildings with three times the floor space under construction at the end of the year. Another seven were in planning stages. This growth and an aggressive sales program point to continuingly growing requirements for electricity in Con Edison's service area.

Electric promotion will take a new turn this year. Past promotions have been of individual appliances with saturation rates in our territory for electric dishwashers and dryer sales. The company's service area has improved significantly as a result of these past promotions.

This year Con Edison is launching a kitchen modernization program aimed especially at customers with one and two-family houses. The modern kitchen promotion will serve as an umbrella for continuing campaigns to sell individual major appliances.

Con Edison's adequate wiring program, now in its sixth year, continues to gain momentum. Over 1 million dwelling units in 30,000 one and two family houses and 2,000 apartment buildings have been rewired since the program's inception. Rewiring of residential commercial buildings has also been encouraging. Over 1 million square feet of office and loft space have been rewired in 183 buildings.

In summary, the outlook for continued growth in Con Edison's service area is excellent.

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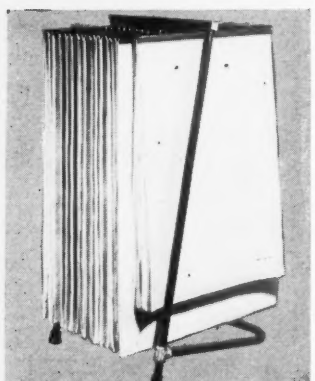

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Consumers Power Company

Jackson, Michigan
DAN E. KARN, *President*

In the three years 1956-58 it has been necessary for Consumers Power Company to invest $285,000,000 on expansion and improvement of electric and natural gas facilities in order to keep ahead of the increasing requirements of its Outstate Michigan service area.

In the five years 1959-1963 we expect to invest an additional $575,000,000. For the present year the figure is $117,800,000, divided about equally between electric and natural gas projects, though in the last few years the ratio between electric and gas expenditures has been roughly two to one.

Electric generating capacity has been increased 29 per cent in the four years. It now totals 2,0 kilowatts. Under construction three new generating units, each a capacity of 265,000 kilowatts will boost present system ca about 40 per cent by the 1962, bringing it up to 2,780,00 watts.

Two of the units will be in o plant on Saginaw Bay near Ba the other in a new plant now early stages of construction Sheldon on Lake Michigan ab miles west of Grand Rapids. the Saginaw Bay units is sch for operation in October of thi

The present year also will

tion of the company's new office building at Jackson, which will several general departments, a new division service center City. Similar centers in Saginaw and Lansing were occupied in A building at Jackson to house company's centralized customer operations will be completed all.

The company has contracted for large additional amounts of natural gas from the south and must build 180 miles of large-diameter pipeline in 1959 to facilitate transmission and storage. Additional compressor facilities also will be installed, and 25 more storage wells will be drilled in the fields operated by our subsidiary, Michigan Gas Storage Company.

We expect a healthy growth of electric and gas use in the industrial, residential and commercial fields. There are particularly good opportunities for electric growth in the fields of air conditioning and house heating. We are promoting these uses actively.

Thus far 1959 has been a considerably better year than 1958. We expect the upward trend to continue.

Delaware Power & Light Company

Wilmington, Delaware
STUART COOPER, *Chairman of the Board*

WIXC closely to its policy of building for the future, Delaware & Light Company has just leted a two unit, 170,000 kilowatt generating plant (the first unit been placed in service December 957) together with substantial mission facilities which interconnd make possible the most effiuse of the company's four gen stations. This new plant was the knowledge that our system had doubled in the last eight and in the firm conviction that ld double again within the next ars.

ce these future requirements larger production units than quired to serve the immediate demands, we now have availubstantial unused capacity in our to take on new business withroportionate capital investment, tion which will continue for two ssibly three years. Thus a larger n of the increased revenues durch years should be carried down income for the benefit of the on stockholders.

ile our growth has required capxpenditures averaging some 16 n dollars annually for the last ars, the 1959 and 1960 requirere estimated at between 10 and llion dollars annually, and no ntial borrowings or sale of s is anticipated during those

major 1959-60 activities will e the building of new or the enent of present substations, the then g of existing transmission istribution feeders, and the exn of gas and electric facilio rea and connect new cus-

addition to our Wilmington e Building will be completed the year and much needed genfice space will be obtained by the n of fifth floor to our General Office Building.

The company's rapid growth in gas and electric sales and earnings is closely related to the growth of Delaware, now the fifth fastest growing state in the nation. Wilmington, the so-called Chemical Capital of the World enjoys a diversified industry including chemicals, oil refining, automotive, steel, leather and textiles. It has excellent and expanding port facilities to handle seaborne traffic, adequate rail service by two large railroads, excellent highways connecting all the major markets in the northeast, adequate electric power, natural gas (also supplied by Delaware Power & Light Company) and an economic climate favorable to business.

The Delmarva Peninsula, comprising Delaware and those parts of Maryland and Virginia lying east of the Chesapeake Bay, produces great quantities of poultry, seafood and vegetables. Processing, packing, freezing and shipping of such products constitute a substantial part of the industries throughout that area. Because of its fine climate, its many beaches, highways and playgrounds, it is attractive as a place in which to live and work where recreation is close at hand.

Because of its mild climate, also, this area is ideal for the promotion of electric househeating, the most important load builder since the advent of air conditioning. With the latter load in the summer and the heating load in the colder weather, the utilization of our facilities should be greatly improved.

Delaware Power & Light Company, in such a situation, has little doubt that its vigorous growth will continue and that its ten year expectations are capable of accomplishment.

(*Continued on page* 64)

BLACK HILLS POWER AND LIGHT COMPANY

RAPID CITY, SOUTH DAKOTA

Supplies electric service to the rapidly growing Black Hills Area in Western South Dakota and Eastern Wyoming

Fiscal Year	Gross Electric Revenue	Net Income	Dividends Paid Preferred	Dividends Paid Common
1953	$3,841,185	$549,210	$75,891	$302,285
1954	4,229,342	604,797	74,230	320,333
1955	4,939,382	704,305	141,808	350,928
1956	5,235,396	749,696	137,549	375,750
1957	5,528,795	789,491	134,886	427,769
1958	6,057,238	888,045	131,308	449,067

Duke Power Company

Charlotte, North Carolina
W. B. McGuire, *President*

Duke Power Company placed in operation the third unit of 165,000 kw rated capacity at the Lee steam electric generating plant in December, 1958, according to W. B. McGuire, president, in his annual report to stockholders. 825,000 kilowatts of additional steam electric generating capacity authorized and under construction at the Allen plant is scheduled for completion during 1959, 1960 and 1961. Plant construction expenditures amounted to $61,616,000 in 1958.

In September, 1958, the Federal Power Commission issued the company a license for a term of fifty years for the Catawba-Wateree Project on the Catawba-Wateree river in North Carolina and South Carolina. The license includes, and the project consists of, the company's ten ex hydroelectric developments (12 with a total rated installe cap of 450,940 kw) locate on Catawba-Wateree river, an th droelectric development now Cowan's Ford, to be loca ed o Catawba river in North Ca rolin ultimately to have a rate ins capacity of 350,000 kw. This tional development is expec ed t vide economical power for peak purposes.

Industrial development i n the pany's service area in 19 3 inc 118 new and 163 major a ditio plants, representing an inv estme over $155,000,000 and an esti payroll in excess of $50,0 00,00

Two new divisions were add the promotion department durin year. The commercial air con ing division was formed to pro the use of electric air conditi and heating in large office buil hotels, hospitals, etc. The promo advertising division is geare promote aggressively the bene electrical living using all adver media. A commercial advisor been added to the home service sion.

An important development i new all-electric rate put into near the end of the year, whic help stimulate the installation of tric heating and heat pumps in h 510 installations of heat pumps made during 1958, increasing total to 1,069.

The company's service are within and covers about 80 per of the Piedmont Carolinas, an of about 24,000 square miles between the Appalachian moun and the Carolina coastal plains. region contains about 55 per ce the metropolitan population and 40 per cent of the non-metro population of North and South lina in a land area only about 3 cent of that of the two states.

The number of customers incr 18,602 during 1958, bringing total at the year end to 630,038 number of meters in service incr 40,830 to a total of 1,03 3,963.

The present estimate of futur struction expenditures is $63,0 in 1959 and $73,000,000 in 196

The rated capacity of the com electric generating plants is 2,7 kilowatts.

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El Paso Electric Company

El Paso, Texas
W. V. Holik, *President*

LARG[E] growth in population and mili[tary] installations in the area [by] our company necessitates [ex]tensive planning by the El [Elec]tric Company for 1959 and [requi]re years.

[new] 0,000 kilowatt turbogenera[unit] a new plant site, at a cost [$1,0]0,000, is under construction [will] be placed in operation about [Mar]ch, 1960. Additional units at this [plan]t will be added as needed to take [care] of anticipated future growth.

[Cons]truction expenditures for 1959 [and] 1960 are estimated at $10,673,000 [and] $4,610,000, respectively. Total ex[pend]itures for 1959 through 1963 will amount to approximately $39,327,000.

The company's service area is an important center of missile development and testing and for air defense training, such activities centering mainly at White Sands Missile Range, Holloman Air Development Center and Army Air Defense Center, Fort Bliss. It is anticipated that these installations will greatly increase in size during the next few years resulting in increased demands for electric energy.

New building permits valued at in excess of $67,000,000 were issued in the City of El Paso alone during 1958 and this amount is expected to be equalled in 1959. In value of new permits, El Paso's standing was 23rd in the nation in 1958 and 87 per cent over 1957. Continuous planning for new substations, lines, etc. will be carried on to serve loads in new subdivisions and expanded present ones.

During the past few years the annual peak load on our system has changed from winter to summer due largely to the increased air conditioning load.

An active sales program for electric heat pumps, house heating, appliances, etc. has been followed to maintain a satisfactory system load factor. 102 heat pumps were installed in 1958, compared with 4 installations in 1957.

Florida Power & Light Company

Miami, Florida
Robert H. Fite, *President & General Manager*

[Flor]ida continues to grow rapidly [in] spite of national recessions. [Last] year Florida's total electric [utility] industry added 74,000 new cus[tomers]. Only one state in the nation [had] so many, regardless of size.

[Flor]ida Power & Light Company's [increa]se was 40,000 customers or bet[ter] than 54 per cent of the State's total. [These] added customers, while pri[mari]ly residential, included many in[dust]rials. Our industrial sales have in[crea]sed more rapidly, percentage-[wise] than have our total sales.

[In] spite of the recession which—in [the] nation as a whole—depressed in[dust]rial sales, ours, still a comparatively small but increasingly large part [of] the total, increased 34 per cent as [best] a 20 per cent increase in our [total] sales. Our numerical increase in [total] kwh sales during the depression [year] of 1958 ranked third among [the] 59 companies and systems reporting [to] Edison Electric Institute.

[Dur]ing the past three years we increased [our] gross generating capability [of] our system by 581 Mkw or 64 per [cent]. We now have under construction [and] under contract for construction [to] completion during the next three [years] additional generating capability [of] 745 Mkw. Included in this total [is a] 165 Mkw generating unit in our [Fort] Myers plant on the St. Johns [River], and a new Port Everglades [power] plant at Fort Lauderdale with [two] 240 Mkw units. This makes a [total] of 1,385 Mkw or 45 per cent. [During] the six year period we will [have] increased our system gross capability by 136 per cent.

Little of this additional capability is necessitated by anticipated abnormally large loads of questionable duration. It will be used as in the past to serve our rapidly increasing customers and their rapidly increasing use. During the past ten years our total customers have doubled and the average use per customer both residential and total has also doubled.

(*Continued on page 66*)

Electric Utilities

For our current list of electric utility stocks considered interesting for growth prospects, write or call —

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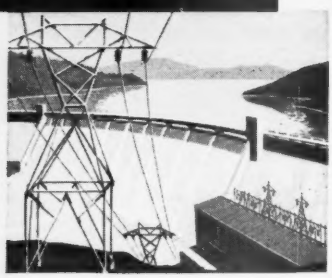

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35 WALL STREET, NEW YORK 5

AND OTHER PRINCIPAL CITIES

Georgia Power Company

Atlanta, Georgia
J. J. McDONOUGH, *President*

IN the midst of the largest expansion program in its history, the Georgia Power Company will invest more than $58 million in 1959 in new facilities to serve the growing power needs of its customers.

Two projects which will add 135,000 kilowatts of generating capacity are slated for completion during the year. One is the $14.4 million Oliver Dam on the Chattahoochee river at Columbus. The first of four hydroelectric units is scheduled for completion in June, with the three other units to go on the line later in the year. The company will spend over $3 million this year in completing the 60,000-kilowatt plant and dam.

The second project is an additional steam-electric generating unit for Plant McManus near Brunswick. Estimated cost of the 75,000 kw unit is nearly $15 million, of which more than $4 million will be spent this year. The new unit will go in service in May.

Other large projects in the year's construction program include:

Work will continue on the Southern Electric Generating Company's one million-kilowatt steam-electric plant near Wilsonville, Alabama. Southern Electric Generating Company is owned jointly by Georgia Power Company and the Alabama Power Company. Georgia Power will invest $9 million in the SEGCO plant in 1959. This amount is included in the $58 million slated for 1959 construction.

Construction will begin on 230,000-volt transmission lines extending from Goat Rock, near Columbus, to Tifton; from Morrow, south of Atlanta, to the Alabama state line; and from Morrow to Winder.

A total of 354.7 miles of transmission lines, including 183.3 miles of 230,000-volt lines, will be built during the year. Four hundred seventy miles of lines will be added to the company's distribution system. Four seven substations with a combined capacity of 642,112 kva will be built, several others will be enlarged.

Work will continue during 1959 on the company's $4.4 million General Service Headquarters at Forrest Hills. Construction there this year will be more than $1,250,000.

In Atlanta, construction has begun on a modern, 21-story building which will house the company's general offices. The building is being built and financed by an independent contractor and will be occupied by the Georgia Power Company under a long-term lease. It is expected to be ready for occupancy by fall of 1960. The cost is estimated at more than $5 million.

Georgia Power will continue to participate in research activities which seek to develop an efficient and economical means of producing electric power from atomic energy.

The company's sales promotional activities for the year are designed to increase kilowatt-hour sales throughout the service area. Merchandising efforts will be devoted primarily to encouraging greater use of electricity among low-use residential customers by concentrating on the sale of high consumption appliances to these customers. In short, the emphasis is being shifted from profit on appliance sales to increased revenue through greater kilowatt-hour sales.

Gulf States Utilities Company

Beaumont, Texas
ROY S. NELSON, *President*

THE Gulf Coast area of Texas and Louisiana, a large slice of which constitutes the service area of Gulf States Utilities, has witnessed tremendous industrial expansion since World War II and has become the petro-chemical center of the world. The abundance of oil and gas, salt, sulphur and lime, a good fresh water supply, a pool of skilled labor and available deep water transportation, combined with an adequate supply of electric power at attractive rates, have presented a complex of inducements for the petro-chemical industry not equaled anywhere else in the world. Practically every national chemical company has expanded its existing plants in this area or established new plants within the last ten years. Many such major plant additions are satellite plants and industries.

Our company is keeping abreast of the ever-increasing demands for electricity to power this expanding economy. We are presently in process of doubling our generating capacity in the five-year period 1958 to 1962. We look forward with confidence, and believe that the prospects for future growth of this Gulf Coast area are second to none.

The Hartford Electric Light Co.

Wethersfield, Connecticut
R. A. GIBSON, *President*

ING 958 the company's gross
ddition s to its electric plant
17,5 2,000 representing major
ns t both the generating and
ution facilities.
econ steam generating unit at
tow with a capacity of 100,-
low s was completed and in
on during the year. This is the
parti ipation unit in the Con-
t C pacity Coordinating Pro-
which this company and two
star d several years ago. The plan allows the installation of larger and more efficient units in which the members participate in the capacity so provided on a basis of equalized reserves.

Continued interest in the private development of atomic research is evidenced by our membership in the Yankee Atomic Electric Company in Rowe, Massachusetts, which is scheduled to complete a 134,000 kilowatt plant in 1960. Each participating company has executed an agreement to take its pro rata share of the energy output in accordance with its investment.

Electric revenues are well diversified with residential representing 41 per cent, commercial 32 per cent, industrial 24 per cent and other 4 per cent.

The electric construction budget for the company for 1959 is approximately $9,000,000, the major portion of which represents additions and improvements to the distribution plant.

Houston Lighting & Power Company

Houston, Texas
T. H. WHARTON, *President*

HILE the phenomenal growth
Houston Lighting & Power
ny has experienced throughout
stwar period was measurably
during 1958, the year proved
e company has a number of
n economic stabilizers.
ubstantial drop in the number
w residential customers con-
during the year as compared
revious years was largely offset
record increase of 662 kwh
ual average use by residential
ers. And, while a few of the
industries in the area sharply
ed their operations and use of
, the majority of the area's industrial plants continued to show healthy increases in their consumption of electric power.

Intensified sales efforts with all customer groups, backed by comprehensive advertising and promotional support, helped secure a sales increase of 270 million kilowatt hours during the 1958 readjustment year.

Much of the industrial and other growth which has made the Southwest a national bright spot centers around this company's service area, and early in 1959 there are already many evidences that the region's normal growth patterns are resuming.

To prepare ahead for that growth, the company brought four new generating units with an aggregate capability of 565,000 kilowatts into service in 1958—by far the largest one-year increase in company history, and more than the total amount in service at the end of 1950. At year's end, system capability was 1,986,000 kw.

The unprecedented construction program in 1958 required an expenditure of over $62 million. It is estimated that $66 million will be spent in 1959.

The company is continuing to push its expansion program, with three new generating units, having a total capability of 725,000 kilowatts, now under construction.

Indianapolis Power & Light Company

Indianapolis, Indiana
O. T. FITZWATER, *President*

E major planning of Indianap-
is Power & Light Company at
t is mainly in the fields of con-
on and sales. This, of course, is
tion o numerous plans of a na-
at is almost routine, but of high
ance for supplying the best of
e to our customers, advancing
blic nd employee relations, and
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ad tion of a generating unit
,000 kilowatts capability to our
in 958 provided sufficient re-
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smi sion, distribution and other
facilities than to the more cost-
erat g equipment.

s our money requirement for
uction in 1959 could be kept
ely low, or about $10,000,000. Construction planned for 1960 is estimated to cost $20,200,000, and for 1961 it is $12,000,000.

Our next major financing is planned for the early part of 1960.

Approximately 40 per cent of the $42,200,000 total of the 1959-1961 construction program will be for power plant projects, mainly the addition at our Elmer W. Stout station, by June of 1961, of a generating unit similar to the one which was completed in 1958.

Most of our three-year construction expenditure (about 52½ per cent) is planned to enlarge and strengthen our transmission and distribution system, in preparation for the greater power demands which are definitely in sight in the thriving Indianapolis area, particularly in outlying sections where home-building is increasing in keeping with population growth, and 10,600 acres of new industrial sites were zoned recently by the Metropolitan Plan Commission. Considerable work also is planned for our underground network in downtown Indianapolis, where extensive redevelopment is taking place with $75,000,000 of new buildings under construction or definitely planned, and additional millions being spent for modernization.

We plan to intensify our sales work in all fields of prospective new business, especially residential. Due to successful results in 1958 from a unique full-scale Medallion Home set up at our downtown Indianapolis offices, in coöperation with more than 100 firms dealing in building materials, house furnishings and appliances, we plan to continue this home at least half of 1959 as part of our participation in the "Live Better Elec-

(*Continued on page* 68)

trically" program publicized nationally.

Promotional efforts will be accelerated for electric heating, which offers opportunity for a large increase in sales volume. It also can help to improve our annual load factor and to equalize our peak demand in winter with the normally high summer peak caused by extensive air-conditioning. With the momentum gained in electric heating in 1958, when more such installations were made by our customers than in any previous year, our program calls for doubling the number of electrically-heated homes in each of the next three years. At the end of 1958 we had 957 residential customers with complete resistance heating and 37 using a total of 53 heat pumps. There also were 152 heat pumps in operation at 51 commercial locations.

Iowa-Illinois Gas and Electric Company

Davenport, Iowa

CHARLES H. WHITMORE, *President*

CONSTRUCTION work will begin during 1959 on an interconnection with the electric facilities of Union Electric Company of Missouri. The company's portion of this interconnection requires the construction of approximately 80 miles of 161,000-volt transmission line, extending southwesterly from the Quad-Cities to near Fort Madison, Iowa, together with terminal facilities in the Quad-City area. It is expected that the interconnection will be placed in operation not later than December 1960.

Construction will also be started during 1959 on the installation of a 125,000-kw addition at the Riverside station, which is located six miles east of Davenport, Iowa. This unit will have about 2½ times the capacity of the company's largest unit and will be approximately 50 per cent larger than any unit then in service in the State of Iowa. This installation, which will cost upward of $20,000,000, is scheduled for commercial operation on June 1, 1961.

Promotional programs of the company are directed toward improvement of system load characteristics through promotion in the areas of industrial sales, commercial lighting, adequate wiring, and sale of major appliances.

The company's area development staff provides assistance to communities served in the obtaining of new industries. In the Quad-City area, the company's principal operating territory, a continuing program of promoting an area concept is followed with a goal of obtaining coördination of planning and development among ten contiguous governmental subdivisions in the metropolitan area of Scott county, Iowa, and Rock Island county, Illinois, with a population of approximately 200,000.

Iowa Power and Light Company

Des Moines, Iowa

N. BERNARD GUSSETT, *President*

IOWA POWER AND LIGHT COMPANY completed 100 years of public service in 1958.

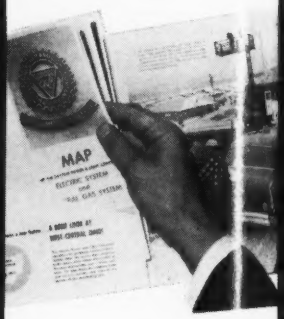
Earnings for this latest year were about in line with earlier estimates at a little better than $2 per share. Common stock dividends have been paid regularly and continuously each year over a period of 50 years, and the present rate, reflecting an increase in 1957, is $1.60 per share.

A major development during 1958 was the termination of the United Power Pool and creation of the Iowa Power Pool, supplemented by the continuation of strong interconnections with other utilities in adjoining states. Iowa is fortified with an arrangement that assures further integration of major investments in generation and transmission facilities and accompanying advantages from the standpoint of both service and cost.

Weather plays an increasingly important role in operating results. As the number of customers using gas for space heating increases, the cold weather effect on gas sales becomes more and more noticeable. Since electricity is required to operate the air circulators used in conjunction with gas heating systems, electric sales are also influenced by the cold temperatures. Peak electric sales, however, continue to occur in the hottest days of summer when comfort cooling devices are in full use.

Electric rates were increased for residential and commercial customers beginning in August, and for large general service customers beginning in October, 1958. The tremendous increase in the city gate cost of gas has prompted intensified study of the retail tariff structure for gas service. The time is deemed propitious to vigorously expedite needed and justified increases in the firm gas rates since company earnings from gas operations

(*Continued on page* 69)



The Dayton Power and Light Company reports on another year of serving a million people in prosperous West-Central Ohio. The facts that make this 24-county area of diversified farming and manufacturing a *favored* location are summarized in a folded map-in-a-pocket . . . a novel addition to this 1958 report.

The ad shown opposite is reaching over 5 million homes. The response is very satisfactory.

If you have not yet sent for *your* copy of our report, the coupon on the opposite page will take just a minute of your secretary's time. Thanks.

ome say
t's impossible

. to write an annual report
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ockholder...

. and have it
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e, too. ↓

Maybe so, but we think we've come mighty close!

The Dayton Power and Light Company reviews the year in a far-from-dull manner for stockholders in 47 states and several foreign countries (keeping in mind the fact that DP&L women stockholders outnumber the men). Those who want statistics will find all pertinent facts about the Company instantly available in a convenient, easy-to-read form. A novel feature of this issue is a folded map-in-a-pocket that gives a clear picture of the prosperous 24-county area of West-Central Ohio served by DP&L. The coupon below will bring *your* copy of DP&L's 1958 report.

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Please send me a copy of your 1958 Annual Report.

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PUF 459

(Iowa P&L Co.—Cont'd)

have declined to a level requiring early remedial relief.

The year 1958 effectively demonstrated the desirability and benefits of a balanced agricultural-industrial economy. Consistently throughout the year Iowa was one of the few bright business spots in the nation. New highs were established in commercial and manufacturing activities with some consequent increase in non-agricultural employment. Major building continued on schedule. Construction in and near Iowa's capital city, Des Moines, served by the company, approximated $60 million in 1958, which is the biggest construction year in the city's history. Meredith Publishing Company has a $10 million, nearly half a million square foot plant under way, which will ultimately house ultra-modern, efficient magazine and book production facilities. *Look* Magazine dedicated a $2¼ million structure in December within a block of the Company's general office. This new structure will house the circulation department of *Look* and the sales agencies of Cowles Magazines, constituting the largest subscription organization under one roof in the world.

Des Moines' status as an insurance center was further enhanced during the year by initiation of construction on a $2½ million addition to the Bankers Life Company and the start of a $1¼ million office for National Travelers Insurance Company. Three hospitals, Mercy, Iowa Methodist and Iowa Lutheran, have some $8¾ million in additions nearing completion. The new $4 million YMCA is well along, contemplating occupancy by 1960. Construction of the $8 million Merle Hay Plaza Shopping Center with plans announced to expand the $3 million Park Fair Shopping Center opened in the fall of 1957, and plans for three other shopping centers totaling some $5 million, will provide Des Moines with attractive retail facilities for its growing population.

In other parts of the company's service area significant changes are continuing to take place. Farmers are still finding it advantageous to expand their operations wherever practicable with the result that the farm population and the number of individual farm customers are declining slightly. The available farm workers are seeking employment elsewhere, reflecting a migration to urban areas. As a result many small communities are

(Continued on page 70)

faced with the alternative of developing more job producing industry or face population loss. Many communities served by the company have formed industrial foundations or committees to expand present industry or attract new names, in most cases, both. It is the company's policy to work with these communities to the greatest extent feasible.

During 1958 the company sought a vote of confidence from residents in several communities where it provides or proposes to provide various utility services. Results of all twelve important franchise elections, each extending for 25 years, were overwhelmingly in favor of the company.

An emergency electric interconnection with the City of Ames' municipal plant was placed in service during the year. Construction was under way at the year end for a similar tie with the electric plant owned by the City of Indianola. Other interconnections of this type are in operation with the cities of Atlantic, Pella and Montezuma. The municipally owned electric system of Walnut, Iowa, was purchased by the company last year.

Investment in new and modern facilities amounted to $14,000,000 for 1958. The 90,000 kw generating addition to the Council Bluffs power station was the most significant single project. This is the largest unit in Iowa. It went into service December 22, 1958, and provides ample reserve and important economies. At the end of the year the company was nearing completion of a major expansion program. Accordingly, construction expenditures for 1959 are estimated at approximately $8,000,000.

In January last year the company sold 50,000 shares of 4.80 per cent Cumulative Preferred Stock and early in February $10,000,000 par value 3⅝ per cent First Mortgage Bonds due 1988. The proceeds were used to pay bank loans in full and to help finance new construction during the first half of 1958. While the company is now borrowing from banks again on a modest basis at prevailing prime rates, the presence of adequate generating capacity for several years and the completion of heavy transmission facilities indicates moderate cash requirements for the months ahead and no permanent financing is contemplated until after 1959.

Iowa Power is prepared for the future. This is an exceptionally fine property. It is in good condition. It is up to date and capable of meeting foreseeable demands. The challenge is a better matching of expenses and revenues. Load building activities are part of the answer. Constant probing for maximum operating efficiency is essential. But, fair prices must accompany dependable, adequate serv
order to attract the savings of i
ors. Thus, the look ahead is fo
upon operations and justificati
results in the best interest of
tomers, stockholders and the p

Iowa Southern Utilities Company

Centerville, Iowa
H. L. MANN, *President*

RECENTLY there have been two important developments related to a long-term power supply that are extremely important to the Iowa Southern Utilities Company and to the State of Iowa.

In 1952 a consulting firm was employed by the Iowa utility companies to determine the power supply requirements for the State during the following twenty years. From these studies a statewide transmission network was planned, to be called the "Iowa Grid." This Grid was to be capable of transmitting throughout the State the power for all the requirements of the investor-owned utilities as well as the municipals and rural cooperatives. The voltage of the network was to be 69, 115 and 161
There already existed a 161 K
from Davenport through Des M
to St. Joseph and Kansas City.
close of 1958 approximately
miles of 69, 115 and 161 KV
made up the Grid. Most of the
lines planned in 1952 were in se
Additional lines will be built as
increases so that the Grid syste
transmit all of the power requir
load growth in Iowa. Iowa Sou
has five points of interconnection
the Iowa Grid.

The second phase of the long
power supply for Iowa was
lished July 1, 1958 when five
companies signed an interconn
agreement which has the effe

"So long as there remains
a single task being done by men or women
which electricity could do as well,
so long will that development be incomplete
What this development will mean in comfort
in leisure, and in opportunity
for the larger life of the spirit,
we have only begun to realize."

THOMAS A. EDISON, 1928

As in most things relating to Electric Power, Thomas Edison's vision anticipated us.

Today, thirty years later, we can not do any better than to implement his vision by a vigorous program promoting the idea of All-Electric Living.

AMERICAN ELECTRIC POWER COMPANY

(formerly American Gas and Electric Company)

AEP

30 Church St., N.Y. 8, N.Y.
COrtlandt 7-5920

Operating companies of the system:

Appalachian Power Company • Indiana & Michigan Electric Company
Kentucky Power Company • Kingsport Utilities, Inc.
Ohio Power Company • Wheeling Electric Company

g th generating capacities and es f the participants. These anie in addition to Iowa South- are I wa-Illinois Gas & Electric, Ele tric Light & Power, Iowa r & ight and Iowa Public Serv-

ch c mpany will continue to own ener ting facilities it constructs he i stallation of additional gen- g ca acity will be scheduled with w t total requirements of the arti ipants. Location and size of nits vill be based on studies of all l ad growth patterns. The arra gement makes possible the llatio of generating units of 100 and larger. The contract pro- for emergency and economy en- inter hange. Present ties will be ained with companies in Illinois Missouri, Omaha Public Power ict and Reclamation Bureau at k City.

e first unit to be installed under ool agreement will be a 125 MW y Iowa-Illinois Gas & Electric avenport for service in 1961. Southern has cancelled its plan 30 MW unit which was sched- for 1961. The company will in- large unit later when scheduled the pool.

P.U.R.
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Jersey Central Power & Light Company and New Jersey Power & Light Company

Denville, New Jersey
R. R. PARKER, *Vice President*

JERSEY CENTRAL POWER & LIGHT COMPANY and New Jersey Power & Light Company operate as an integrated unit with common top officers and key personnel and the following information is presented, therefore, on a combined basis.

This integrated unit is one of the fastest growing electric utilities in the United States serving 3,256 square miles or 43 per cent of the entire state of New Jersey. The geographical relationship to New York City and Philadelphia, the No. 1 and No. 3 trading marts in the country, makes it an area of highly desirable and wide industrial diversification:

	1948	*1958*	*Increase Amount*	*%*
Kwhr Sales (1000's)	1,038,000	2,584,000	1,546,000	149
Peak Demand—KW (non-coincidental)	240,000	611,000	371,000	155
Customers—Average	218,254	357,333	139,079	64
Total Operating Revenues ($1000)	24,412	61,375	36,963	151
Effective Generating Capability	207,000	639,000	432,000	209

The sale of 2,584,000,000 kilowatthours of electricity and operating revenues of $61,375,000 both exceeded those of the previous year by 8 per cent.

At the end of 1961, it is expected that revenues will increase to $78,231,000 or 27% over 1958 and kilowatthours will increase to 3,395,115,000 or 19% over 1958.

The "load balance" is very favorable and is not expected to change significantly:

	Year 1958			
	Revenues	*% of Total*	*Kilowatthour Sales (1000's)*	*% of Total*
Residential	$29,695,000	48	1,032,000	40
Commercial	15,297,000	25	543,000	21
Industrial	12,747,000	21	877,000	34
All Other	3,636,000	6	132,000	5
Total	$61,375,000	100	2,584,000	100

The integrated unit does not engage in the direct merchandising of appliances, but instead, operates under a Dealer-Cooperative Plan.

In the next three years, customer growth is estimated at 13.3 per cent, peak load is expected to rise 33.1% and revenues are projected to increase 27.5 per cent. To provide for this growth, $8,983,000 will be spent for generating plant, $27,914,000 for transmission facilities, $39,607,000 for distribution additions and improvements and $8,244,000 for other facilities during this three-year period, a total of $84,748,000.

The most important project is the construction of a 230 kv transmission grid planned to ring the service area, with inter-connections to a similar grid of affiliated companies in Pennsylvania and with other participants in the Pennsylvania-New Jersey-Maryland Inter-connection "Power Pool."

No new steam generating facilities are planned in the 1959-1961 period, but it is expected that construction will be started on a pumped storage hydro-plant of 112.5 MW peaking capacity. This plant will be built in conjunction with Jersey City's Longwood Valley Potable water supply project.

Although steam generating capacity will not be increased during the next three years, a power supply well in excess of present requirements or projected load levels is assured through interconnections with the General Public Utilities Corporation

(*Continued on page 72*)

integrated system, which in turn is a direct participant in the Pennsylvania-New Jersey-Maryland Inter-connection "Power Pool." A major improvement to power supply economy will take place in 1959 with the installation of automatic controls for generator loading. This equipment will instantly change generation on the various units to give the most economical over-all loading as the system load increases or decreases.

The plans for the physical additions and improvements to the property go hand in hand with plans for expansion of mechanized accounting and record keeping procedures. 1959, customer billing, accoun and cash posting will be comple mechanized using punched card tems. Many other operations are ready automated through the us similar systems. As growth contin further mechanization is planned

Kansas Gas and Electric Company

Wichita, Kansas
G. W. EVANS, *President*

As of March 1, Kansas Gas and Electric Company at Wichita had under construction or on order new generating equipment that will raise the company's capability to 7 times what it was at the end of World War II.

Standing at 105,000 kw in 1946, KG&E capability is scheduled to reach 769,000 kw by 1961, with the addition of a 116,000 kw generator at the Murray Gill plant in April 1959, and completion of the first unit, rated at 160,000 kw, for the Gordon Evans plant in 1961.

Both the Murray Gill and the Gordon Evans plants are of outdoor construction, with only the office and the control room enclosed. The four units of the Murray Gill plant, built since 1951, and including land and substation, were built for an average of $102 per kilowatt, a very favorable unit cost.

Site for the new Gordon Evans plant will be cleared in 1959 for construction to begin on the first unit thereof. The plant is scheduled for an ultimate capability of 800,000 kw.

To bring this new power into the company's 138,000 volt transmission network, KG&E intends to adopt bundling of conductors to conserve overhead space. Certain of these lines and substations are already under construction.

During 1959 the company's general program of improving efficiency through greater automation of facilities will be continued.

The company has required no new permanent financing since 1956. Temporary bank loans are contemplated during 1959 to maintain the company's cash position and finance the year's construction. New long-term financing, probably common stocks and bonds, is under consideration for 1960 to finance the company's expansion in 1960 and 1961.

With a summer peak since 1953, the company is vigorously promoting spring, fall, and winter loads, emphasis on electric comfo t hea and quick recovery water h ating homes, businesses, schools, farms, factories, thereby making them electric.

Kansas Gas and Electric Comp took the lead in developing Gold dallion Homes in its service are constructing two all-electric Pat Homes in 1958, based on recomme ed specifications of home buyers Wichita.

As a symbol of its "Fifty Year Making Friends," KG&E has in duced an automatic photoelec Friendship Yard Lantern to mar golden anniversary during 1959. electric post lamp, which automat ly turns on at dusk and off at daw manufactured by one of KG&E's tomers and distributed nationally is now being sold by all employee the company, following the unu success of the all-employee promo of quick recovery electric w heaters in 1958.

The company continues to w closely with regional economic de opment councils and other groups moting the growth of its service a

The company is continuing and panding its management training gram. This is in addition to the s matic effort to provide improved the-job training.

An expanded program of hospi zation insurance, extending m medical coverage, will be offered t employees in 1959.

Based on a wealth of diversi natural resources, varied farm pro tion of wheat, sorghums, corn, hay and livestock, ample water s ply, trained and productive labor f and a central location in the nat the territory served by Kansas and Electric Company wi l com to grow and prosper. As always i past, Kansas Gas and Electric C pany in the future will have a and dependable electric ser ice fo needs of its present and future tomers.

TWENTY YEARS OF PROGRESS

	December 31 1958	1948	1938
Utility plant at original cost ...	$323,776,823	$121,818,953	$71,911,281
Long-term debt	109,591,000	65,000,000	48,944,000
% Debt of net utility plant	39.4%	64.5%	70.4%
% Debt of total capitalization ..	41.5%	57.2%	53.7%
Preferred stock	41,391,656	21,533,455	22,007,800
Convertible preference stock	11,483,360	—	—
Common stock and surplus	101,895,477	27,057,268	20,250,117
Total capitalization	264,361,493	113,590,723	91,201,917
Operating revenues	92,116,213	43,117,637	17,256,629
Net income	13,893,971	6,029,153	1,873,220

Dean McMitchell
President

NORTHERN INDIANA PUBLIC SERVICE COMPANY
Hammond, Indiana

The Kansas Power and Light Company

Topeka, Kansas

BALFOUR S. JEFFREY, *President*

THE KANSAS POWER AND LIGHT COMPANY serves a territory of 27,500 square miles that in the was largely dependent upon agriure, but which is now experiencthe stability of a more balanced omy resulting from a rapid inrial growth. Today, as for the last ral years, manufacturing employt contributes more to personal ine in Kansas than any other single ce. This balance is proving to be a stable and important growth r in the operations of the Com-

Plans for 1959 and 1960 contemplate approximately $27½ million for construction with about 90 per cent to the electric department. Expenditures for 1959 are expected to be about $15½ million, including the substantial completion of a 125,000 kilowatt addition to generating capability. This will add about 28 per cent to the system capabilities, which have tripled in the past ten years.

For five years, summer electric peak demands have substantially exceeded that of winter months. Sales promotions therefore have been directed to the development of winter loads and that of the valleys of spring and fall. This year, promotion of electric heating has been intensified and particularly directed toward residential and school customers. Early results of this year are encouraging, despite strong competition from gas. Aggressive commercial lighting and cooking programs are also being carried forward.

The steady growth pattern of the company registered in the past five years is expected to continue.

Kentucky Utilities Company

Lexington, Kentucky

F. I. FAIRMAN, *President*

THE KENTUCKY UTILITIES COMPANY will spend approximately 200,000 for new construction, reals and replacements during the 1959. The proposed construction et provides for the completion of (100,000 kilowatt) generating of the Green river generating on located in Muhlenberg county, tucky in the heart of the Western tucky coal field. This generating will be among units having the st fuel cost for any generating using solid fuel in the United s due to its proximity to coal s and the favorable price of the tern Kentucky coal.

nother major item of construction osed during the year will be 53 of 161,000 volt transmission line nding from the Green river generating station to Morganfield, Kentucky.

The company during the year will engage extensively in sales promotion activities with the objective of increasing the consumption of the residential, commercial, and industrial customer. The company does not sell appliances but promotes their sale through the dealers in its service area.

The company plans during the year to carry on a rather extensive program directed toward the promotion of electric house heating. Specially trained personnel have been employed to provide the prospective house heating customer with technical advice. It is anticipated that the electric house heating load will be beneficial in providing revenue from electric distribution property which has been installed to serve air conditioning load and is not fully employed during the months in which air conditioning is not required. Since the past two years indicate the company's annual peak load will be during the summer months the electric house heating load will improve the annual load factor on the company's production facilities.

During the year the company will continue its very vigorous industrial and community development program. The program encourages the development of strong industrial committees in company-served communities to provide community data, offer fixed price plant sites, and promote community betterment. These programs will receive substantial contribution of the time of the company's personnel during the year.

Lake Superior District Power Company

Ashland, Wisconsin

G. A. DONALD, *President*

THOUGH 1958 was generally a recession year, and the Lake Superior District Power Company was rsely affected, as were many other ies in this area, nevertheless our system demand reached an all-high during the latter part of the This is an indication that more rical equipment is being added to ines which, in turn, will be re- in greater total kilowatt-hour of electricity in the immediate re.

e major capital investment budgeted for 1959 and 1960 is the installation of additional boiler capacity at our Bay Front steam generating plant at Ashland, Wisconsin. This new boiler will be a cyclone furnace type having a capacity of 320,000 pounds of steam per hour and will operate at 900 pounds per square inch pressure and 900 degrees temperature. Work will begin in May or June of this year and plans call for completion about September 1960. Total cost of this addition is estimated at $2,900,000.

This boiler will increase the capability of the Bay Front plant from 72,000 kilowatts to 92,000 kilowatts, thus providing adequate generating capacity to take care of normal load growth.

Other expenditures proposed for 1959 include further improvements to one of our water power installations, and an acceleration of the company's program for rebuilding and increasing the distribution system capacities.

(*Continued on page 74*)

Long Island Lighting Company

Mineola, New York
J. J. TUOHY, *President*

LONG ISLAND LIGHTING COMPANY now supplies electric service to 544,109 customers, and natural gas to 311,794. Indications are that this year will see a continuation of customer growth about equal to that of 1958—21,500 new electric and 11,000 new gas customers.

Revenue for 1958 established a new record at $121,960,000 or an average of more than $10 million a month. The increase was $12,098,000 for the year with electric contributing 78 per cent and gas 22 per cent. Sales of electricity were 3.7 billion kilowatt hours, up 7 per cent. Gas sales were 13 billion cubic feet, up 27 per cent over 1957 — helped considerably by increases in heating saturation and colder weather.

Earnings per share on the common stock for 1958 were $1.62 on 7,472,000 average shares compared with $1.44 in 1957 on a lower number of shares.

The Nassau, Suffolk and Rockaway Peninsula areas of Long Island constituting the LILCO territory continues its steady growth. We estimate the population of that area, as of January 1, 1959, at 1,878,713, an increase of 55,252 over our January 1, 1958 estimate.

Capital expenditures by LILCO for the ten years since 1948 have totaled $403 million. Construction expenditures for 1959 will total approximately $45 million—$33 million will be spent on electric production, transmission and distribution facilities, $5 million on gas mains, services and meters and $4 million on common plant items.

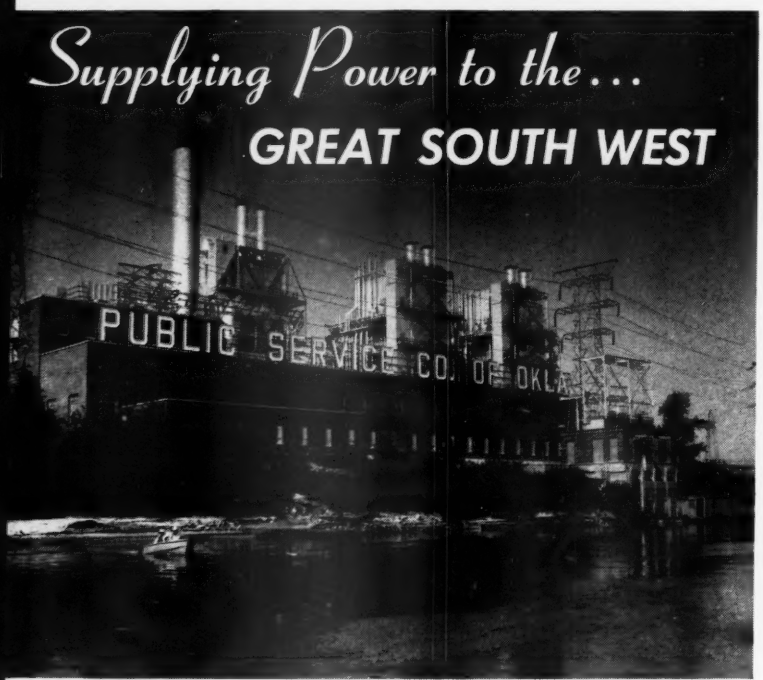
In November of 1958 our total generating capability reached 1,071,000 kw by the addition of a 185,000 kw electric generating unit located at our Port Jefferson plant. A fourth identical unit at the same location is under construction. A substantial part of the steel has been erected and it is planned to have the unit on the line in the Fall of 1960.

Present plans call for another similar unit to be in operation in the Fall of 1962 at our Edward F. Barrett power station at Island Park, Nassau county.

LILCO has completed negotiations for approximately 230 acres at Northport in Suffolk county upon which we will eventually build additional electric generating units. At present, we are in the process of studying meteorological conditions in the area to assist in stack height determination.

Last year LILCO, in addition to expanding its generating facilities, also completed major extensions and additions to both gas trunk mains and electric transmission systems. The biggest electric transmission job completed by LILCO was completed in June of last year. It involved 23 miles of 138 kv overhead run from Port Jefferson to our Holbrook substation then to Pilgrim and another ten miles to Ruland road substation. 259 steel towers were erected all at a cost of about $5,200,000 including cost of right-of-way where it did not parallel our existing lines.

Pilgrim substation was placed in operation last year. It provides terminal and switching facilities for the 138 kv lines from Ruland road and Port Jefferson and provides step-down transformation to the 69 kv system.



500,000 KW TULSA STATION - LARGEST PLANT IN THE SYSTEM

System Generating Capability...

2,500,000 Kilowatts

CENTRAL AND SOUTH WEST CORPORATION
Wilmington, Delaware

Central Power and Light Company
Public Service Company of Oklahoma
Southwestern Electric Power Company
West Texas Utilities Company

nsmis on system. Oil circuit breakwit a ten million kva interrupti rating were used at Pilm. T se were the first such large akers on our system.

Anoth r important installation le la year was that of a new 25 69 00 volt transmission line n P t Jefferson to Riverhead to t th needs of our customers in tern ong Island. We believe it ser the area adequately until mid 960's when an extension of 138 00 volt "backbone" transsion ill be needed.

This y ar our concentration will be n th transmission and distribu syst m. The major operation will sist of the reinforcement of two kv ircuits from Southampton East Hampton which will be converted to 69 kv operation. Two 23 kv lines from Riverhead to Mattituck will be reinforced with larger conductor.

A program of establishing division and zone operating headquarters, throughout LILCO territory continued during 1958 and is expected to be completed in 1963. It is designed to effect economies of operation and to better LILCO service to its customers.

Since LILCO is a combination company these headquarters will be common plant facilities. In February of this year Greenlawn zone headquarters in Suffolk county, constructed on approximately 12 acres of land, was put into service. Western Suffolk division headquarters at Brentwood, covering about 25 acres, is scheduled for occupancy the end of 1959. It will house gas and electric operating and commercial personnel, shops, stores, transportation facilities, storage yards and platforms, parking areas and a railroad siding.

Another similar headquarters to serve the Queens-Nassau division will be built on a 15 acre site at Hewlett in Nassau county. Development will start in the fall of 1959 and is scheduled for occupancy by the end of 1960.

We have plans for yet another divisional headquarters in eastern Long Island near Riverhead. This is scheduled for completion in the latter part of 1963.

Total cost of common plant facilities described above and including a Roslyn zone headquarters expansion will be about $10,000,000.

Minnesota Power & Light Company

Duluth, Minnesota
CLAY C. BOSWELL, *President*

XPANSION of an aggressive load building program into the new l of electric house heating was be this year by Minnesota Power & ht Company.

nder the stimulant of a lower "all-tric" rate, the company expects in 9 to add 160 all-electric home cus ers. The new concept of the all-tric home will include electric e heating.

ummer peaks on the interconnect system of Minnesota Power & ht Company and its subsidiary, erior Water, Light and Power pany, make electric house heat a desirable load.

A sales staff with good experience ales of major appliances, commer lighting and cooking and indus applications of electricity, will y forward the electric house heat prog m. High recovery water heaters also are being pushed for the first time by the company.

In building "bread and butter" business, company policy will continue to have sales promotional and advertising programs slanted toward improving dealer sales of appliances. Company merchandising of appliances will continue an integral part of the overall sales effort to provide an avenue for pioneering new types of appliances and to maintain fair price levels.

Intensive effort is continuing in building residential, rural, commercial and diversified industrial loads to more than balance the increasing use of large industrial power in iron mining. The trend toward beneficiation of iron ores on the Mesabi, Vermilion and Cuyuna Ranges to improve lower grade ores and to fit ores to the specific needs of the blast furnaces means greater use of electric power.

To meet the growing loads of mining and other classes of customers the company has been engaged in a continuous program of expansion and modernization since the end of World War II.

Currently the major construction project is the completion of the $25,000,000 first phase of the Clay Boswell steam electric station at Cohasset, Minnesota. The first 65,000 kilowatt generating unit was placed in service in August, 1958, and the second unit of similar size is scheduled for completion early in 1960.

The construction budget for this year totals more than $7,000,000, most of which will go into completion of the generating station at Cohasset. The balance will construct new substation facilities, strengthen distribution lines and extend service to new customers.

Mississippi Power Company

Gulfport, Mississippi
A. J. WATSON, JR., *President*

$43 million construction pro gr designed to expand and ngth the electrical facilities of thea Mississippi, has been an nced Mississippi Power Com y as begins its 35th year of op ion. he construction expendi s wil xtend over a three-year pe 195 961.

nce end of 1940 the company inv d more than $75,000,000 ew c nstruction in its 23-county ice a a which includes building three modern high pressure, steam-electric generating plants. Its investment has more than doubled since 1950 and is expected to triple in the period 1950-1961.

The largest project scheduled for the three-year program is the completion of a second 75,000 kilowatt generating unit at the Gulf coast plant. The first unit was placed in service during the summer of 1957 and the second unit will go into operation early in 1960. All three company plants are interconnected with The Southern Company system which integrates the plants of Alabama, Georgia, Gulf and Mississippi Power Companies.

The company plans to construct several new high voltage substations and lines and a vast amount of the proposed expenditures will be devoted to distribution systems so as to provide for anticipated area development and load growth.

(*Continued on page 76*)

Mississippi Power & Light Company

Jackson, Mississippi
R. B. WILSON, *President*

THE outlook for 1959 in Western Mississippi is very encouraging. All economic indices point to continued growth and expansion of the residential, commercial and industrial economy in our company's service area.

The expenditure for production and transmission facilities will be relatively light during the next two years. During this period we expect to concentrate on improving our distribution system. Primary emphasis will be given to improving voltage regulation and service reliability.

Our construction budget for 1959 is slightly under $8,000,000. A major portion of this will go toward the completion of #4 unit at the Rex Brown steam electric station in Jackson. This unit is expected to be operative by April 1.

Approximately 60 miles of 115 kv. transmission lines are planned, including a 10-mile section of single pole transmission circuit through the City of Jackson. The conductor size on this circuit is 1,272 MCM ACSR which along with the related terminal facilities will have a capability of 240,000 kva. Over $3,600,000 will be expended on distribution projects, office buildings, equipment and transportation facilities.

For 1959 the company's Marketing and Development Department has planned one of the most ambitious and aggressive sales promotion and development programs ever attempted in its 36-year history.

In the residential field we plan to concentrate primarily on the promotion of all-electric homes and load building campaigns to increase average consumption 240 kwh per customer. To implement this program an all-electric residential rate has been in effect since 1958 and a new customer prospect program has been ina rated which has as its goal the sal 30,000 major appliances. Emplo are encouraged to participate in prospect program with attractive pliances offered as bonuses for p pects turned in to the sales dep ment.

Major programs are scheduled the commercial sales field cook air-conditioning, lighting and hea Through these specialized campa the company expects to increase mercial load almost 21,000 kw du 1959.

Extensive use will be made of ualizers and direct mail featuring customer endorsement.

One of the most effective sales t in the commercial cooking field is use of a truck mounted kitchen demonstration sales to prospec commercial customers.

Our industrial development p gram for 1959 has as its objective sisting local communities in the l tion of seventy-five new industrie Western Mississippi, and in addi plan to assist in the expansion p ects of existing industries. The cessful culmination of this prog is expected to produce approxima $400,000 additional revenue from dustrial lighting, heating, pro heating and motor load.

Prospects for continuing growth are most encouraging and fer a real challenge to the comp to keep abreast of the developmen the area by constantly building ah to assure an adequate, depend supply of electric power so that may be prepared for power dema comparable to that experienced western Mississippi during the decade.

During the next five years we pect to expend approximately $ 000,000 for new facilities, or rou one-third of our present plant count, which indicates to some ex the confidence our company feels the potential economic growth of service area in the years ahead.

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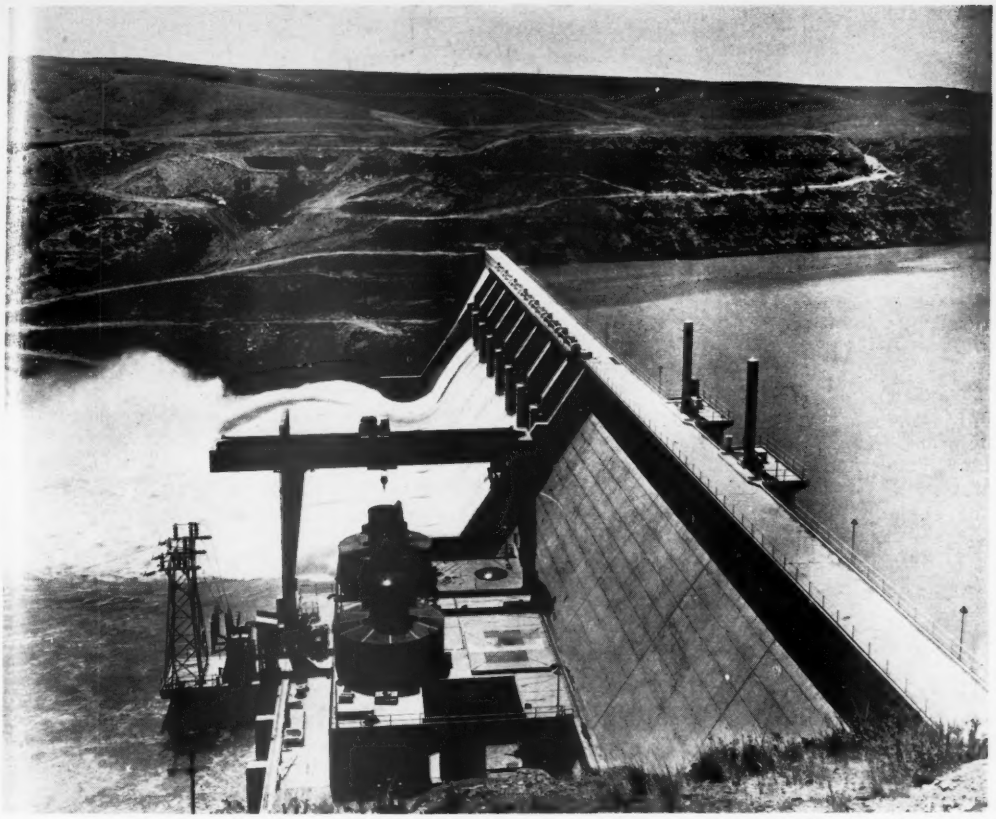
Stone & Webster Securities Corporation

March 26, 1959.

(*Continued on page 78*)



Cochrane Project—Our 14th Generating Station

One More to Grow on

INVESTMENT TOTALS $120,000,000 IN DECADE

In the past 10 years, our investment in new property has totaled $120,000,000, which has nearly doubled our utility plant, now standing at $221,460,182. Largest project completed in 1958 was Cochrane Dam (above), now whirring out 50,000 kilowatts.

ELECTRIC, GAS REVENUES RISE WITH GROWING DEMAND

Our operating revenues for electric and natural gas operations in 1958 reached a new high of $44,123,355. Income available for common stock came to $9,895,272, equal to $3.96 per share. Demand for the services we offer rises with Montana's healthy growth.

STATE'S ECONOMY STABLE, BASED ON RICH RESOURCES

The bountiful resources of Montana, the Treasure State, produce a stable and diversified economy. Strong elements are agriculture, petroleum and lumbering. Industrial and commercial expansion continues. In a decade, value added by manufacture zoomed 167 per cent.

MONTANA MARKET HAS BRIGHT FUTURE . . . BE IN IT!

King-size Montana, with its rich resources, healthful climate, peerless recreation and plenty of elbow room, is on the threshold of a great future, which already is taking shape. Interested in growth? Why not deal yourself in on the Montana pot?

The Montana Power Company

Serving a Growing State

The Montana Power Company

Butte, Montana
C. H. KIRK, *Vice President*

MAJOR extension on The Montana Power Company system during during 1959 will be the construction of a 69,000-volt transmission system and distribution lines to supply electric service to the hotels, motels, stores and other facilities in Yellowstone National Park, which each year plays host to more than 1,400,000 visitors.

Montana Power for years has served Park headquarters at Mammoth Hot Springs. The 1959 project will consist of building 51 miles of transmission line in the Park to serve facilities at Madison Junction, Old Faithful, Norris, Canyon, Lake, Fishing Bridge and West Thumb. Service will be available to all locations by July 1, 1960.

The company in 1959 also will construct a second 161,000-volt transmission line from Missoula to Anaconda and a new substation in Anaconda, completing a program that started in 1957 and which will, upon completion, give the system two lines from the Kerr hydroelectric development to a major industrial load center in the Anaconda area.

Installation of microwave communications facilities between Butte and Billings will complete this program and will give the company a microwave system extending from Butte the south to Pakowki Lake, Can on the north and from Billin gs on east to Kerr plant and Mi ssoula the west.

Expansion of the "Elec ro-D sales and advertising progra n, wh was initiated in 1958 u nder trade-mark, "Electrical Tu sday," planned in 1959. Under this progr Montana Power Company oins w other phases of the electri al in try — manufacturers, di tribut dealers and others — in a mon concentration of advertisin g to p mote the theme of "Live B tter E trically."

New England Electric System

Boston, Massachusetts
IRWIN L. MOORE, *Chairman*

LAST year New England Electric System expended about $36,000,000 on its expansion program and a large portion of this total was spent for an additional turbo-generator at the System's Salem Harbor (Mass.) station. This 150,000 kilowatt unit—the largest in New England—increased the station's capacity to 320,000 kilowatts and the System's generating capability to nearly 1,500,000 kilowatts when it went on the line in mid-1958.

Mindful of the continued growth of electric use, we recently announced plans for still another modern high efficiency plant. Preliminary engineering and site preparation are already under way for an initial 225,000 kilowatt unit in a new station at Brayton Point in Somerset, Mass., near Fall River. This 225-acre site is capable of eventually supporting a 1,000,000 kilowatt plant.

Realizing that large generating sites are a necessity for future expansion, we have also bought a site on the Connecticut river in Gill, Mass., and are negotiating for two more locations on the South and North Shores of Massachusetts.

Presently we estimate construction expenditures for new plant and equipment in 1959 at approximately $35,000,000.

While we are going ahead with new steam-electric plants, at the same time we are investigating the revolutionary possibilities of atomic electricity in the New England area through our 30 per cent stock ownership (by New England Power Company) in Yankee Atomic Electric Company.

In the spring of 1958 Yankee began major construction on its 134,000 kilowatt atomic power plant in Rowe, Mass. Through the year excellent progress was made on the structural end with steel and concrete work for the most part completed. Activity at the site this winter and spring is centered on the erection of the vapor container.

During 1958 Yankee firmed up arrangements for its permanent financing. This calls for $20,000,000 in common stock to be owned by the 11 sponsoring New England utilities, $20,000,000 of five per cent first mortgage bonds to be sold to a group of life insurance companies and $17,000,000 of 4¾ per cent notes to banks. Regulatory applications on the financing program are now pending.

This year Yankee engineers will complete the steel sphere and much of the interior work. This will be followed by installation of the highly-complicated equipment which will be needed to turn out atomic electricity. New England's first commercial atomic-electric plant is scheduled for operation late in 1960.

New England Electric's financing program for 1959 currently calls for the public sale of about $23,000,000 of senior securities by subsidiaries. There are no plans for the sale of New England Electric common shares this year.

In 1959 we hope to make further progress in simplifying our corpo operations. Still to be deter mined the SEC is the question of whet we may retain our gas properties an additional integrated system. E ly in 1959 Narragansett Electric s its gas properties in Westerly, Rh Island, and New England Elec System sold its investment in The quot Gas Company in Connecti Negotiations are pending for the s of the remaining gas properties Narragansett. If successful, we be in the sound position of having gas properties concentrated in state and we believe they then constitute another single integra system.

Encouraged by the results achie during 1958, we in New Engl Electric System look to 1959 with fidence.

And we believe that the look is indeed promising. With nite signs of industrial recovery anticipate that all classes of ele and gas sales will increase and larger and more economical unit service for the full year, we expe show additional improvement in income and per share earnings if have a normal water year.

In making this forecast we with faith and confidence in the proven growth and diversity of New England area and in the pe who depend upon us for their gas electric service.

(*Continued on page* 80)

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New Orleans Public Service Inc.

New Orleans, Louisiana

J. MASON GUILLORY, *Vice President*

PLANS for an estimated $25,000,000 expansion of electric power for New Orleans were announced in the 1958 Annual Report of New Orleans Public Service Inc. issued recently. Studies are being made for the installation of a second electric generating unit at the Michoud steam-electric station, newest of the company's three power plants. The unit is rated at 220,000 kilowatts, nearly twice the size of the company's largest existing generator. It is scheduled to be in service by the spring of 1963, by which time, power requirement estimates indicate, it will be needed to handle that year's peak electrical demand and to provide adequate reserve capability.

According to the report the total investment of the company in plant, property and equipment reached $164,542,867 at the end of 1958. This represented a rise of 4 per cent above the previous year.

Public Service revenues in 1958 increased 6.5 per cent with a gain in net income of $404,304 above 1957. Most of the added net income was used in paying regular dividends on $3,942,975 of common stock sold in December, 1957 to provide funds for additional facilities to serve customers.

The report estimates that new street use taxes will increase annual net payments to the City by Public Service by $384,700, based on 1958 gross receipts. The increase stems from an ordinance passed by the Council of the City of New Orleans last August levying street use franchise taxes of 2 per cent on electric and gas gross receipts and ½ per cent on transit gross receipts. The same ordinance provided for discontinuance of a civic improvement reserve account, termination of a credit on City electric bills and repeal of a transit seat tax and a dividend restriction clause of a type not in accord with generally accepted financial principles.

The report showed that additions to electric facilities during 1958 included new and expanded major substations to increase the capacity and dependability of the electric system.

The gas system was also improved and expanded during 1958, according to the report. The largest of several new buildings being constructed in the square of ground bounded by Poydras, Magnolia, Perdido and Clara streets was practically completed by the end of the year.

Improvements in transit operations included the inauguration of express transit service on two lines. Express 70 operates along S. Carrollton avenue and into the central business district via Earhart boulevard, and Express 71 operates along Nashville avenue and into the central business district, also via Earhart.

The report revealed that Public Service has broadened its participation in nuclear power projects. Late in 1958 the company joined High Temperature Reactor Developm Associates, Inc., a non-profit gr formed by about 50 electric compan to build, subject to AEC approval, experimental nuclear power plant e ploying a particularly promising t of high-temperature gas-cooled actor. Meanwhile, progress was ported in the research program sp sored by Southwest Atomic Ener Associates, a non-profit organizati formed in 1957 by 15 electric co panies, including Public Service.

A feature of the report is a map the city depicting some of the ma facilities and attractions that dist guish New Orleans as a city offeri exceptional opportunity and enjoya living. The map also shows the la areas in the eastern section of the c to be devoted to port and industr development in conjunction with c struction of the Mississippi Riv Gulf Outlet.

In his letter to stockholders a company members, Public Serv president George S. Dinwiddie s "the diversification that is charact istic of the New Orleans econo served to moderate the local effects the 1958 recession. In total, the le of economic activity in the area a proximated that for 1957 despite c clines in some industrial operatio oil production and exports. Busin improvements in the latter part of year promise continuing gains d ing 1959."

Niagara Mohawk Power Corporation

Syracuse, New York

EARLE J. MACHOLD, *President*

NIAGARA Mohawk's blueprint for the future follows the general pattern of expansion for growth that has characterized our planning for the past twelve years. In each of the last two years our expansion programs exceeded $100,000,000, bringing the gross utility plant account to well over the billion dollar mark. By the end of this year the account will probably reach $1¼ billion.

In many other industries this might be interpreted as a great plunge in the realm of speculation on future prospects, particularly when we have just experienced a mild, but significant slackening of industrial activity. But we know that in our business we live half in the present and half in the future—and that future to us is bright. The trend of population is up, the acceptance of our service is almost universal, and the uses of our product are multiplying.

Thus, our construction program has been keyed not only to the immediate period ahead, but to long-range objectives. We mean to be ready for the increased demands on us as a public service company and as a reliable investment in the future of our private business enterprise.

We realize that the investor, the employee, the customer, and the business world generally regard our industry as a stable, conservative, solid-citizen type of business. We live and work in a regulated business climate. We don't make glamorous profits, but we weather depressions. While our rates are in mills and pennies, our tremendous volume brings in the dollars. It probably seems to many t we have a steady, ready-made bu ness that almost runs itself!

But we realize that to justify t status and to keep this business gr and growing, we must live simulta ously with the dual problems of to and tomorrow. We still have a job do in convincing our customers many of them in big business th selves—that we deserve to collect same kind of dollar everybody does, that our tradition of lower lower rates can no longer defy spiraling costs of labor, mater taxes and everything else required make and market our product. M over, our so-called monopoly in franchise area is little help when have to meet the competition of o companies, industries, and the

ment itself in the money market our expansion funds. Neither we won as active or as large an dience as the loud voices of the ething-for-nothing philosophers gover ment in business.

these and other considerations gh h vily in our future planning. ile w build for tomorrow's needs, must also cope with today's prob- s of f nancing that building, secur- an a lequate return to investors, izing he full capabilities of personnel and properties for most economic and satisfactory results, and continuing to provide the highest quality service to our customers.

Some of our specific efforts at Niagara Mohawk to accomplish these objectives are greater concentration on "selective selling" of our services to increase net income; heavier promotion (in cooperation with manufacturers and dealers) of appliances and equipment using these services; more direct and frequent communications with our customers, employees, and the financial markets; extending our area development program; keeping pace with the fast developing advances in operating techniques and equipment; continuing our research participation in nuclear fuel projects; and keeping before our regulatory commission the need for "going" rates for our services. We believe these efforts will aid and accelerate our program to meet the requirements of a future of great promise.

Northern Indiana Public Service Company

Hammond, Indiana
DEAN H. MITCHELL, *President*

NORTHERN INDIANA PUBLIC SERVICE COMPANY will spend $64 ion in 1959-1960 for expansion modernization of facilities, ac- ding to Dean H. Mitchell, presi- t in his annual report.

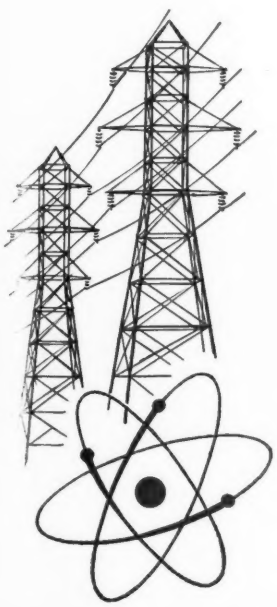
Mr. Mitchell said the multi-million ar construction program is de- ned to keep ahead of the ever in- asing demand for gas and elec- ity in northern Indiana, and to ieve greater efficiency and economy peration. "It is tangible evidence," he said, "of our confidence in the continuing growth and prosperity of the territory we serve."

The report cited the tripling of the capacity of the Dean H. Mitchell generating station at Gary as the largest project in this two-year construction program.

It is expected, Mr. Mitchell said, that by July of this year the first of two additional 130,000 kw units will go "on the line," with the second to follow in November, bringing the station's total net generating capacity to 390,000 by the end of the kw year.

Another project in this two-year program is the construction of a 138,000 volt substation at San Pierre to be connected to the NIPSCO Flint Lake substation near Valparaiso by a new 138,000 volt steel tower transmission line. In addition, several 34,500 volt transmission lines will be converted to 69,000 volt lines while primary distribution voltages will be

(*Continued on page* 82)



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raised and transformer capacity increased to provide greater load carrying ability, the report said.

Gas mains will be extended as needed in 1959 to transmit and distribute large increased supplies of natural gas. Additional safety devices will be installed at several regulator stations and cathodic protection facilities provided to prolong the life of the gas distribution system.

To help finance this huge construction program, Mr. Mitchell said NIPSCO is currently selling $25 million of 30-year first mortgage bonds. Additional financing will depend upon market conditions at the time it is undertaken. The utility president noted that in August, 1958, the pany's common stock was li-sted o Midwest Stock Exchange.

The company's investment in erty and plant totals about $32 lion, emphasizing the magni ude o job of supplying the more than 1 lion residents of northern In diana dependable gas and electric serv

Northern States Power Company

Minneapolis, Minnesota
ALLEN S. KING, *President*

NORTHERN STATES POWER COMPANY in entering its fiftieth year of public service in 1959, has plans that will enable it to continue to be a leading industry in the Upper Midwest.

The company's construction program will be on an increased scale during the next few years to provide this thriving area with more and more electricity and gas. Construction expenditures in 1958 totaled $43,000,000 and in 1959 will rise to $56,000,000. Included in this year's figure is an allocation of $4,500,000 for providing natural gas service to communities where NSP now supplies manufactured gas service. The gas expenditure is contingent upon action by the Federal Power Commission authorizing extension of pipeline service to these communities.

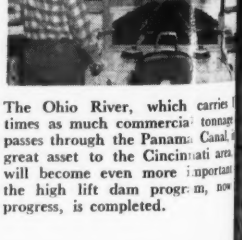
The company's construction expenditures for this and the next three years are expected to total $202,000,000. In 1960 NSP will spend a total of $65,000,000 for new construction, with $43,000,000 scheduled for 1961 and $38,000,000 for 1962. Average expenditures for new construction during the next four years will be $50,500,000, compared with average expenditures of $37,500,000 for past 10 years.

Largest single construct on pr being completed this year is the tion of a 156,000-kilowatt uni NSP's High Bridge plant in St. The new unit is expected to be p in service this summer. A unit o same size is being added to the pany's Black Dog plant south o Twin Cities and will go on the li 1960.

Ground will be broken this sum for Northern States Power Co ny's atomic-fueled steam gener plant. The company has allocated

THE CHECK THAT'S BEEN MAILED
EVERY YEAR FOR 107 YEARS

There's something solid about Cincinnati . . . and the great industrial area of which it's the center. Here we have a steady growth of widely diversified industry. Here, you find one of the nation's most skilled labor forces . . . with pride in its exceptionally high productivity rate. And it's hard to imagine a more ideal location as a distribution center. All this has given the area's economy an enviable stability. It's not surprising that in such a community the Gas & Electric Company would reflect that *same* stability —with an unbroken record stock dividends paid, every ye for 107 straight years.



The Ohio River, which carries times as much commercial tonnage passes through the Panama Canal, great asset to the Cincinnati area will become even more important the high lift dam program, now progress, is completed.

THE CINCINNATI GAS & ELECTRIC COMPANY
107 years of unbroken dividend history

00 this year for continued re- n an construction. About $3,- 00 h already been spent on re- n an development on this plant SP d ten other utilities known entr Utilities Atomic Power iate who are contributing to rch d development. The plant e loc ed near Sioux Falls, S. D., s ex cted to be in operation in It w ll have a rated capacity of 0 ki watts and will contain a ar-fi d superheater as well as a olled re-circulation boiling water reactor. It is believed that NSP's atomic plant will be the first in the world to be built with a nuclear superheater and it is expected that this will make a major contribution toward bringing atomic plants into competitive range with conventional steam plants.

In order to encourage the use of electricity for house-heating purposes, Northern States Power Company has established a new rate for "all-electric" homes. Although the Twin Cities of Minneapolis and St. Paul and the company's general service area are located in a comparatively cold climate, the announcement of a new "all-electric" home rate recently was received with almost unparalleled enthusiasm from dealers, builders, and customers.

Now we can sell the "all-electric" or Gold Medallion home and we are very optimistic about this new load builder as we prepare ourselves to promote and sell the advantages of heating electrically.

Oklahoma Gas and Electric Company

Oklahoma City, Oklahoma
DONALD S. KENNEDY, *President*

LAHOMA GAS AND ELECTRIC COMPANY has been completing a power plant addition each year he past several years and 1959 e no exception. During the sum- of 1959, we expect to complete stallation of generator No. 4 for 00 kilowatts at our Mustang sta- near Oklahoma City. This new will increase our system's capac- 1,138,000 kilowatts, which will out 4½ times our total capacity end of 1949. The completion of the Mustang unit will give us adequate capacity for the next two years.

Transmission and distribution facilities are being expanded to provide service to the new industrial loads and new residential and commercial customers in our area. No new financing is contemplated before 1961 or 1962.

Our sales program, along with serving new commercial and industrial customers, will stress greater effort in reaching the winter load to help improve the annual load factor. This will include emphasis on electric heating.

We will also expand our program of working with builders to promote the installation of major electric appliances in new homes. Advertising will be coordinated with sales.

Operating budgets are studied each year to improve efficiencies through the use of modern equipment and facilities. This includes accounting as well as operating departments.

Otter Tail Power Company

Fergus Falls, Minnesota
C. G. WRIGHT, *President*

TER TAIL POWER CFMPANY is currently constructing a 53,500 eam addition to one of its major ating stations, Hoot Lake plant rgus Falls, Minnesota. When the addition goes into production September 1, 1959, it will add ximately 40% to the total net ility of the company system, will substantially lower the aver- nit cost of production for the n as a whole. The company's to- nstruction budget for 1959 is a over 9,000,000.

the company's service area, includes most of northwest west- ntral Minnesota, eastern North Dakota and northeastern South Dakota, new load is developing in the form of light industry, particularly plants to process agricultural products. The company, through its industrial sales department, and through its participation in organizations interested in area development, is encouraging the establishment of new industry and the expansion of existing industry within its service territory.

The company is not in direct merchandising business. However, with its organized program of advertising, dealer aids and dealer information, it is engaged in load building through aid to area electric appliance dealers. The 1959 budget for loadbuilding activities was increased approximately 10 per cent over that of 1958.

About April 1, 1909, a small hydroelectric station near Fergus Falls first generated electric energy and sent it over a twenty-five mile transmission line to a single wholesale customer in another community. That event signaled the beginning of Otter Tail Power Company's fifty-year record of growth and development. The company has planned a number of events to commemorate its fiftieth anniversary which takes place in April, 1959.

Pacific Gas and Electric Company

San Francisco, California
NORMAN R. SUTHERLAND, *President*

HE onomy of the Northern nd entral California service f P ific Gas and Electric Com- has moved forward briskly in as anticipated. The company is ng on a vigorous program to the developing load and stimu- ontinued growth.

es in 1958 were substantially unchanged from the previous year, but climatic conditions were more responsible than economic factors for this result. Population growth continues at a rapid rate and an increase of about 215,000 persons in PG&E service territory is expected in 1959. The company expects to connect about 54,000 electric customers to its lines this year, a gain of about 3 per cent. Residential customers generally account for more than 90 per cent of the annual growth. In the past few months there has been a substantial rise in the number of residential building permits issued, which would tend to substantiate the forecast.

(*Continued on page* 84)

Commitments for the construction of new industrial plants and expansion of existing plants likewise continue at a high level. During 1958 such new commitments totaled $409,517,000, making it the second highest year of record, and much of this work will be undertaken in 1959. The volume at the end of last year was about 10 per cent above the previous year.

The company's system electric peak load, normally occurring during the summer, will be served by system plants with capacity now totaling 5,219,000 kilowatts and additional power from plants of others. Of the system plant capacity, 685,500 kilowatts was completed in 1958, establishing an all-time high for new capacity additions on the PG&E system in a single year. Five hydroelectric and two steam-electric installations were included in these additions.

Construction expenditures for 1959 are estimated at $156 million, compared with $192 million last year. No new electric generating capacity will be completed, but work will be in progress on two 325,000-kilowatt generating units to be added at Pittsburg power plant for completion in the years 1960 and 1961, respectively.

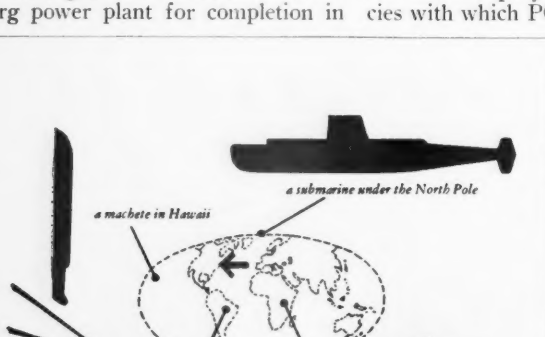
Construction of America's first geothermal plant, and the first in the world to be privately financed, is scheduled to begin during the year. Using steam from natural geysers approximately 70 miles north of San Francisco, this plant will have an initial capacity of 12,500 kilowatts. Additional units will be installed if warranted. More significantly, design and developmental work will proceed on the company's Humboldt Bay atomic power plant of 60,000 kilowatts, for which ground breaking is scheduled in 1960. As announced last year, this plant, to be entirely financed by PG&E, is expected to produce power at a cost which will be competitive for that area.

A 42,000-kilowatt hydroelectric plant on the Kings river will be placed in the construction schedule later this year. It will be the third and final plant of the company's King river project, of which two were completed in 1958. One of these is the Haas powerhouse, the nation's first large underground station. Several water conservation projects by public agencies with which PG&E is cooperating in respect to the by-product ele power are in the stage of negotia or nearing construction.

The Vandenberg Air Force B now activated as a West Coast m sile launching base comparable Cape Canaveral, Florida, i pro ing phenomenal growth in numbe customers and load in San Luis O po and Santa Barbara counties. effects of the production of mis components also are being felt in merous other areas served by PG The economic growth of the com ny's service area is broadly ba however, and defense production not disproportionate in the total b ness activity.

Sales promotion, intensified at start of the recession in 195 , succe ed in producing a highly satisfac level of appliance sales by dealer 1958, running counter to the nati trend, and a vigorous activity in direction will be carried forwar 1959.

A significant step in the field of ployee relations is a Savings P Plan for employees effective Apr subject to the approvals by stockh ers and the Internal Revenue Ser



The Hartford Electric Light Company serves areas where industrial expansion stimulates suburban activity. New homes, schools, churches recreational facilities and shopping centers appear in every community.

This activity originates in three industrial activities: (1) Immigration of industries, (2) New enterprises and (3) Plant expansion and modernization.

THE HARTFORD ELECTRIC LIGHT COMPANY

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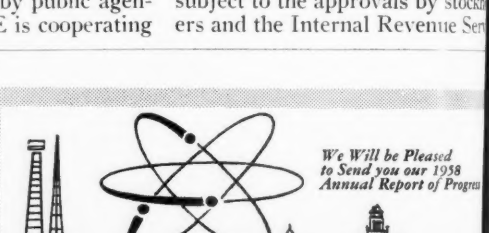

We Will be Pleased to Send you our 1958 Annual Report of Progress

Ipalco-Land . . .

a bright spot of stability

in the Nation's Economy

Last year Iowa — and Ipalco-Land — proved the benefits of agricultural-industrial balance. In fact new highs in farm, commercial and manufacturing activity were realized in the Central and Southwest Iowa area served by Ipalco — consistently among the nation's stablest. The year past was also a landmark at Ipalco — historically — celebrating the centennial of gas service and the 75th anniversary of electric service in Des Moines — and the completion of 50 years of uninterrupted common stock dividend payments. Ipalco is setting the pace to further develop the great agricultural-industrial potential of its service area for the future.

IOWA POWER AND LIGHT COMPANY

Des Moines, Iowa

lan is designed to encourage in-
al savings and to assist employ-
acquiring a stock interest in
mpany on a continuing basis.

PG&E continues to have the distinction of being the most widely owned electric and gas utility in the nation and ranks seventh in number of stockholders among the corporations of the country. The year 1958 was the nineteenth consecutive year in which the number of stockholders increased.

Pacific Power & Light Company

Portland, Oregon
D. R. McCLUNG, *President*

IFIC POWER & LIGHT COMPANY
cessfully concluded during 1958
ord-breaking $62,715,000 con-
on program which was drama-
y the completion of power proj-
that doubled the company's
ting capacity for service to cus-
s in five states of the Pacific
west.

e new developments are the 204,-
w Swift hydroelectric project
and largest of PP&L's projects
ashington state's Lewis river;
ddition of a third 45,000-kw
t the Merwin plant on the same
and the 100,000-kw Dave
on steam-electric plant near
r, Wyo. At the dedication of the
Wyoming plant, it was announced
will start in 1959 on a second 100,000-kw unit scheduled to be placed in service late in 1960.

PP&L's power projects have shared an important role in the largest hydroelectric program in the region's history, a program that places the region in a favorable power supply situation for the next five years, perhaps longer.

The company's peak load in 1958 was 878,000 kilowatts, and it is estimated the peak by 1964 will be 1,400,000 kw, which is provided for by present power supply arrangements.

Major planning emphasis during 1959 will be on plans for projects to be started in and subsequent to 1960 in order to meet power requirements beyond 1964. PP&L has license applications pending before the Federal Power Commission for two more hydroelectric projects on the Lewis river, is investigating the feasibility of a third in Oregon, and also is exploring coal deposits in both Washington and Oregon as possible low-cost fuel to supply future steam-electric plants for the system. The company is a partner in the Pacific Northwest Power Company, which proposes to build the 1,520,000-kw High Mountain Sheep project on the Snake river between Idaho and Oregon.

PP&L's construction activity during 1959 will require $23,500,000, principally for transmission, distribution and substation expansions that represent a new high level of normal construction activity for the system.

(*Continued on page* 86)

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Pennsylvania Electric Company

Johnstown, Pennsylvania
LOUIS H. RODDIS, JR., *President*

DESPITE the relatively unfavorable economic climate of 1958, the use of electricity continued to increase in much the same trend which has marked the industry's phenomenal growth since its inception.

This company's faith in the future is displayed by 1958 construction expenditures of $43,800,000 and a 1959 construction budget of more than $42,000,000. This budget provides not only for the addition of conventional-type generation and transmission facilities but also provides for starting an experimental project. Penelec, together with the other three domestic affiliates in the General Public Utilities System, Westinghouse Electric Corporation and Gilbert Associates, Inc. as architect-engineer, will engage coöperatively in the construction and operation of a small nuclear reactor. The reactor will be a pressurized water type designed for an initial rated capacity of 5,000 kw and will be connected to existing generating units at Penelec's Saxton station.

This company does not merchandise but promotes the sale of electrical load building appliances by means of a vigorous program of dealer coöperation. This coöperation involves participation in the 1959 E.E.I. National Electric Living program which includes local advertising that will tie in with national television and magazine advertising. The company operates demonstration centers at several conveniently located points and maintains a large well-trained sta sales experts, home econ nists engineers to further the c eatio an "all electric climate" n h commercial establishments nd i tries.

A special electric heating rate the complete home) was dopt 1958. During 1958 the numbe homes heated electrically in the pany's territory increased rom 204 and at least 70 more a e no der construction. It is be ieved electric heating (both co plete auxiliary) for homes and comme establishments has a trem ndous tential which will balance or e the air conditioning load whic ready has a good start but whic pears to be only in its infancy.

Philadelphia Electric Company

Philadelphia, Pennsylvania
R. G. RINCLIFFE, *President*

PHILADELPHIA ELECTRIC has long been active in the atomic power field. Presently, it is the sponsor of a proposal submitted to the Atomic Energy Commission by a group of more than fifty investor-owned utility companies, known as the High Temperature Reactor Development Associates, Inc., to build a high-temperature, gas-cooled nuclear power plant on the P.E. System. The AEC has accepted the proposal as a basis for contract negotiations. If the contracts are approved by the Joint Congressional Committee on Atomic Energy, the plant, with a capacity of 40,000 kilowatts, will be constructed on the Susquehanna river at Peach Bottom, Pennsylvania, which is located on the west side of the Susquehanna river approximately ten miles upstream from the Conowingo Dam. When completed late in 1962 or early in 1963, the $24.5-million plant will serve as an effective developmental prototype for a full-scale installation designed to conform to modern-day steam conditions in terms of high temperatures and pressures. The project gives encouraging promise of a short-cut to placing atomic power on an economic basis.

Philadelphia Electric's expansion program is geared to the future growth of Delaware Valley. Expenditures during 1958 reached an all-time high of $118,574,000, or over $2-¼ million a week. Outlays during 1959 will continue at about the same rate. Expenditures planned for the five-year period, 1959 to 1963, are expected to total $437,000,000.

An important addition to Philadelphia Electric's generating cap was made last summer when a 185,000 - kilowatt turbine - gene was placed in operation at Schu station in Philadelphia. This which more than doubled the cap of that plant, has established a r for efficiency.

The first 325,000-kilowatt tur generator unit at the new P. E. E stone station, now being complet the Delaware river near Ches scheduled for operation this fall. unit will generate one kilowatt of electricity from less than thirds of a pound of coal, whic make Eddystone one of the w most efficient power plants. Th coal rate will be attained throug use of steam superheated to 12 grees Fahrenheit at a pressur 5000 pounds per square inch. Be of these supercritical tempera and pressures, two steam reh stages, instead of the usual one be possible. A second 325,000 watt generating unit will be add 1960. Extensive construction of t mission lines and substations t tribute this added power is prog ing rapidly.

The company's gas service tinues to expand with sig ificant creases in the use of gas for h heating and industrial purposes Edison steam heating plan , in c Philadelphia, is supplying incre quantities of steam to city office ings, stores, and hotels.

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Portland General Electric Company

Portland, Oregon
FRANK WARREN, JR., *President*

DING to the "power plenty" situation in the Pacific Northwest, completed projects in 1958 ng 20,000 kilowatts of new elec- —making a construction in- ent of some $49,000,000—and nced its intention to build the st dam ever constructed within nfinc of Oregon.

ring the past year $22,800,000 pent on new construction, which ded the completion of 124,000- att Pelton dam on the Deschutes and 79,000-kilowatt North Fork-Faraday project on the Clackamas river. An application for a preliminary permit was filed with the state hydroelectric commission to build the $71,000,000, 300,000-kilowatt Round Butte dam, also on the Deschutes river. A $1,100,000 fuel conversion project was completed during 1958 at PGE's 82,000-kilowatt Station L steam plant, permitting the use of natural gas as well as fuel oil for generation. In addition to new hydro capability, PGE and other Oregon utilities have contracted for large blocks of power from projects such as Priest Rapids and Rocky Reach dams, which are being built in Washington by local agencies—and in November, 1958, PGE was one of 52 American utilities to propose design and construction of an experimental power plant of new concept which promises a major advance toward the nation's goal of economical electricity from the atom.

PGE's 1959 construction budget will be about $13,000,000, assuming no new hydro construction starts.

Public Service Electric and Gas Company

Newark, New Jersey
DONALD C. LUCE, *President*

ES of electricity in 1958 exceeded hose in 1957 by almost 5 per cent as sales increased more than 15 ent. During 1958, new records established for electric peak load aximum day's send-out of gas. company now has more than ,000 electric customers and ,000 gas customers.

In the past five years, gross additions to electric and gas utility plant have amounted to more than $570,000,000. Because of the demands for electric and gas service, we are proceeding with a $340,000,000 construction program. Expenditures during 1959 in connection with this program will approximate $160,000,000 of which $135,000,000 will be for electric facilities and $25,000,000 for gas facilities.

The major projects in the program are the new Bergen and Mercer generating stations. At the Bergen generating station in Ridgefield, N. J., the first of two 290,000-kw generat-

(*Continued on page* 88)

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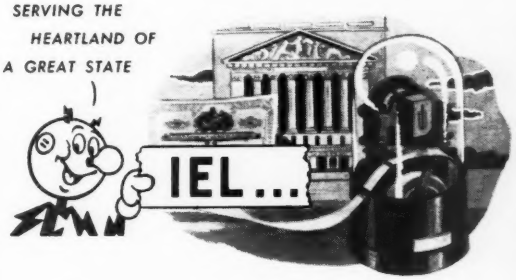

Our 76th Year of Progress

● These busy years have been years of progress for our State, as well. We are proud that in this three-quarters of a century, we have had the opportunity to steadily bring better electric living to Iowa homes, businesses, industries and farms.

A Copy of our 1958 Annual Report is Yours if Requested

IOWA ELECTRIC LIGHT AND POWER Company
An Iowa Corporation

ing units is scheduled for service this month (April) and the second unit in August of this year. When completed, this station will have cost approximately $110,000,000. On the Delaware river, near Trenton, N. J., construction of the Mercer generating station is proceeding on schedule. Initially, this station will have two 320,000-kw generating units, one scheduled for service in 1960 and the other in 1961. Upon completion of the Bergen and Mercer stations and after planned retirement of 81,800 kilowatts of generating capacity at another station, the installed capacity of the company's eight generating stations will total 3,692,500 kilowatts, 45 per cent more than the capacity at the beginning of 1958.

The first all-aluminum transmission towers in the United States are being designed for the Public Service system. The use of aluminum for tower construction will reduce the cost of erection and eliminate costly painting.

Construction is progressing on an all-indoor switching station located close to the central business district in the City of Newark. This station, to cost approximately $6,000,000, is scheduled for service before the summer of 1959, and will transform electrical energy from the high-tension 132,000-volt level to the subtransmission levels of 26,400 and 13,200 volts. Transformer capacity of this station will be 165,000 kilovolt-amperes. Another switching station is under construction in Gloucester to meet the growing demands for electricity in the South Jersey area.

Substantial additions to and reinforcement of the bulk transmission system and distribution system are planned. In addition, the company expects to install 24,000 electric meters, 3,000 miles of underground and overhead wire, 7,000 additional distribution transformers, 5,500 new street lights and approximately 12,000 additional poles during 195

To increase the effective ca of gas mains and reduce the re ments for production and pu facilities, the company is cont its program, which was start 1955, for converting custome pliances in certain areas from th of mixed gas to straight natura Over 350,000 customers are served with straight natural ga by the end of 1959, natural gas supplied to about 500,00 , or cent of our gas customers.

To meet the increased dema customers now served with ga of an expected 27,000 addition heating customers, it is planned stall more than 300 miles of gas 23,000 services and 28 000 during the year.

It is presently estimated tha ing 1959 approximately $100,0 of new securities will be sold nance a portion of the cost of th tensive construction program.

Puget Sound Power & Light Company

Seattle, Washington
FRANK MCLAUGHLIN, *President*

NOTWITHSTANDING the fact that its area experienced the warmest weather in 65 years and, to a lesser degree, the general economic decline, Puget forged ahead to new highs during 1958. Given normal weather and continued improvement in general business, 1959 should be another year of growth and progress for the company. Results for the month ended January 31, 1959, tend to support this belief. Net income increased 14 per cent above that of January 1958 and operating revenues gained 13.4 per cent over the same period a year ago.

Currently, total new plant expenditures for this year are estimated at $23,700,000. In addition to moving ahead with its 158,000-kilowatt hydroelectric development on the Baker river in northwestern Washington, from which 94,000 kilowatts will come late in 1959, the company plans substantial improvement and expansion of transmission, distribution and other facilities during the year.

Today, Puget's customers total 207,500 whose usage of electricity is continually rising. During the last two decades, load growth has averaged about 10% annually. Though it varies from year to year, over the long term the fluctuations tend to average out and the company's planning is based on the expectation that this percentage gain will continue. Such growth potential arises from the fact that the company serves one of the most economically promising sections of the country, whose population increased 74.2 per cent in the 15 years ended 1955 and is authoritatively forecast to rise by 60 per cent in the period 1955 through 1965.

Aggressive sales activities, aimed at builders and buyers of new homes and developed around the nationwide "Live Better Electrically" and "Medallion Home" programs, have helped bring the benefits of electric living to more people in the area. Over 150 builders in the company's area are constructing scores of Medallion homes and forecasts indicate that the home use of electricity will continue to grow.

Puget is keenly aware of the importance of broadening the industrial base of the territory served. In a variety of ways it is directing its activities to encourage new and expanded industry and it is apparent that the company's area development program is bearing fruit. It is directing its efforts at gathering and disseminating economic, site and other information having to do with the region's resources and assets and alerting industries elsewhere in the country to the potential of this area. Of major import was the establishment of close working relationships with the civic, business and governmental groups in the State which have a common objective with Puget in the ind expansion of the Puget Soun cade region. The growing popu and markets of the Pacific Nor are destined to bring additional facturing to Puget's area.

Within recent years new prises that have come into P service area include oil refiner oil pipeline from Canada and n gas from Canada and the San Basin. There are also new pla produce such diverse items a Boeing commercial jet transpor craft parts, plastic boats, furn paper containers, formaldehyd phuric acid, frozen foods, stru concrete products, brick, ceram lignin, nonferrous metal pro plywood, and electronic contr radio equipment. Further, the large expansions under wa planned for retail shopping an distributing centers.

Looking to power needs in the ahead, it is axiomatic that an ad future power supply is indispe to the economy of the area a better electric living for peop this end Puget is pursuing a vig course. Through its own new g tion, long-term power contract Chelan and Grant County Utility Districts and other res the company expects to have power available to meet an anti peak demand in excess of 1,

ts in the mid-1960's. The projects which help assure an adequate power supply are on or of schedule.

e the region's hydroelectric al is expected to be adequate needs for some years to come, is keeping abreast of technoadvancement in the production of commercial electric power by the use of nuclear fuel. Since its inception in 1955, the company has been a member of the atomic power study group of the Puget Sound Utilities Council. As a special project looking toward the future and to gain additional "know-how" and experience in this field, Puget is working with more than 50 utility companies which have formed a nonprofit corporation called "High Temperature Reactor Development Associates, Inc." This entity has presented a proposal to the Atomic Energy Commission to develop and build an advanced prototype atomic power plant, to be located on the Philadelphia Electric's system.

Southern California Edison Company

Los Angeles, California
HAROLD QUINTON, *Chairman of the Board*

ERN CALIFORNIA EDISON MPAN 's expenditures for con- n and plant expansion during years, 1958-59, will exceed a of a billion dollars, according nouncement by Harold Quinairman of the board.

on spent $150,000,000 in new ing facilities, substations, ofransmission and distribution lines in 1958, and the amount ed for continuing the comrecord expansion program this about $107,000,000.

ulation gains and the increasing electricity per customer have the company to double plant in the last eight years. In o do this, more than two-thirds illion dollars have been spent that period.

t 58,000 new electric meters onnected to Edison lines last d it is predicted that approxihe same number will be added 1959. This will mean a twopopulation increase of about in the 10 counties the comerves.

Edison Company expects to ct 975 line miles of distribud transmission circuits this his compares with 936 miles strung last year.

new lines, poles and towers are uilt to provide electric service rapidly growing residential, rcial and industrial areas out Edison territory.

Quinton pointed out that an es- 4.8 million people lived in Edi- ervice territory at the end of Accor ing to latest estimates, ulation of the area served by will increase to 5 million in d to 7 million by 1975.

Edison's service area covers about 14,250 square miles and includes 106 incorporated and more than 150 unincorporated cities and towns, he noted.

In 1958, the Edison system "peak demand"—that is, the amount of electricity required by Edison customers —was 2,962,000 kilowatts. Company planning is based on a projected demand of about 3,900,000 kilowatts by the end of 1962, Mr. Quinton said.

To keep ahead of this need for power, the company has been building new generating plants at an unparalleled rate of speed, he declared. Two new generating units with a combined capacity of 435,000 kilowatts were completed and placed in commercial operation at the company's new Huntington Beach steam station last year. Application has been made to start a fourth and final unit there. Huntington Beach steam station now represents an Edison investment of $58,-000,000, and addition of the third and fourth units will bring the cost to about $110,000,000.

Initial testing and breaking-in is now underway on the first 220,000-kilowatt generating unit at Mandalay steam station, near Oxnard in Ventura county. A second, "twin" unit is expected to be ready for service before the end of this year. These two units will cost about $56,000,000.

He noted that construction started in January of last year on the Mammoth Pool Project, a major addition to the company's famed Big Creek-San Joaquin river hydroelectric development in the High Sierra, northeast of Fresno.

This project will consist of a large earth-fill dam and reservoir capable of storing 123,000 acre feet of San Joaquin river water, a 20-foot diameter, eight-mile tunnel blasted through solid granite and a powerhouse equipped with two generating units of 75,000 kilowatts capacity each.

Mammoth Pool will cost about $50,-000,000, bringing the total Edison investment in its Big Creek network of dams and powerhouses to more than $200,000,000, Mr. Quinton said. Californians will benefit from the project not only through its additional power generation, he pointed out, but also through use of the new recreation area for fishing and boating resulting from creation of the lake. It also will aid flood control and provide additional controlled irrigation to the rich San Joaquin Valley farmlands below, he said.

In the coming age of atomic power, the Edison Company has been doing important research for the last two and a half years, Mr. Quinton said. He pointed out that the company now operates an experimental, 7,500-kilowatt nuclear power plant in connection with a sodium graphite atomic reactor built in the Santa Susana mountains for the Atomic Energy Commission by Atomics International, a division of North American Aviation, Inc. To date, this plant has generated and delivered about 11,000,000 kilowatt hours into the Edison system.

Edison also is joining with more than 50 other investor-owned utilities in a proposed experimental plant, to be built on the system of the Philadelphia Electric Company, which may prove to be a major short-cut to the nation's goal of economic electricity from the atom. This plant will have a generating capacity of 40,000 kilowatts and is scheduled for completion in early 1963 at a cost of about $24,-500,000, Mr. Quinton said.

Southern Indiana Gas and Electric Company

Evansville, Indiana
A. B. BROWN, *President*

year 1958 recorded new hs in gross revenues and sales ricity and gas, A. B. Brown, president, stated in his annual report. Gross revenues of the company passed the 20 million dollar mark for the first time in its history. This was more than double the gross earnings of ten years ago. Generally, the expenditures for

additions and improvements to plant and property in 1958 were for the further strengthening of electric and gas facilities.

During the past ten years, the company has invested over 57 million dollars in facilities and other property to supply adequate and reliable electric and gas service to the people of its area. Of the 1958 total, $4,295,813, or 75 per cent, was for electric facilities; $1,274,883, or 22.2 per cent, for gas purposes, and the balance for general requirements.

The major project under c tion during 1958 was a 60,0 watt interconnection with the of Louisville Gas and Electr pany.

Estimated construction e tures for 1959 are $5,4 0,000

Southwestern Electric Power Company

Shreveport, Louisiana
J. ROBERT WELSH, *President*

ONE of the most important years in history faces Southwestern in 1959. Here is what the year will mean to us: We have laid plans for the largest construction program; we are anticipating the largest revenue budget; we have plans for borrowing the largest amount of money; and we have outlined the most aggressive sales campaign for 1959 than any single year since the company has been in business.

This all comes about from a careful study of the potentials of the Northwest Louisiana, East Texas and West Arkansas areas in which we operate. Our Industrial Development Department reports that more and more commercial and industrial businesses are showing interest in locating within our area. In 1958, for example, 19 new plants and 21 major expansions of existing plants were made which resulted in 2,791 new employees being added to payrolls.

Southwestern's 1959 construction budget calls for spending $20,464,000, with major projects being additions of new power facilities. A generating unit of 100,000 kilowatts will be placed in operation at Lieberman power plant in April, while a second 100,000 kilowatt generating addition will start operating at Arsenal Hill power plant early in 1960. Southwestern's three-year construction budget covering 1959 through 1961 calls for spending $66,452,000.

In 1959, we have estimated our customers will pay us $37,500,000 which will be 8.3 per cent over the 1958 revenues. Our Sales Department has set its sights on bringing the average residential customer's electric use up to 3,000 kilow tt-ho year in 1959—an increa e of 2 watt-hours in one year. Our all-electric homes to be built area this year is 152—three t many as went on our lines i

Despite the recession, 195 good year for Southw stern residential customers. Appliance in most major categories sh healthy increase over 1957. average residential custo mer's use increased by 260 kilowa in 1958. The 1958 appliance our service area, and the increa over 1957 are:

Window air conditioning units	13,199	a 5.6%
Air conditioning systems	952	a 23.4%
Electric ranges	2,354	a 20.0%
Clothes dryers	2,586	a 10.2%
Food freezers	6,826	a 28.9%
Fast recovery water heaters	152	a 58.3%

Another milestone we are planning for in 1959 is connecting up the 200,000th customer to our lines. We added 5,904 customers during bringing total customers up t 355 at the end of the year.

Southwestern Public Service Company

Amarillo, Texas
J. E. CUNNINGHAM, *President*

ALL of the elements for continued growth are still at work in our 45,000 square mile service area, and our future plans call for continuing to keep apace of the development in the area.

Our 1959 construction budget calls for expenditures of approximately $14,000,000, with the largest project being a new generating station, our twelfth, which is under construction north of Amarillo. This new station, scheduled for completion in 1961, will have a capability of 112,500 kilowatts, and will increase our system generating capability to 925,000 kilowatts. By comparison, our capability in 1949 was 269,000 kilowatts.

In recent years, we have joined with the electric appliance dealers in our service area in aggressive appliance sales promotion programs. In 1958, the dealers in our area reported appliance sales topped 1957, the best previous year, by 16.2%. The top promotion of the year, a fall electric range campaign, produced more sales than the same cam year previous.

In our second complete year motion of electric commerci ing, our company had the th record for companies our size 37% increase in sales over 1

Our 1959 program calls t tinued efforts in all fields, res rural, commercial and indus keep up the growth record wh area has shown in the ast 15

The Tucson Gas, Electric Light and Power Company

Tucson, Arizona
J. LUTHER DAVIS, *President*

ELECTRIC service requirements in Tucson and its environs have continued to double every five years since about 1946; a rate approximately twice the national average. During 1959 we expect customers to increase 5.3%, kilowatt hour sales to increase 20% and KW System peak demand to increase 15.7%.

A 75,000 kw turbo genera placed in service prior to the 1958 summer peak. This

gene ation capability by 64%. nd su h unit, now under con- n, e ected to be ready for 0 su mer peak, will increase ion c pability by an additional

elect property additions for e ex cted to exceed $10 mil- pow r plant and general sys- pans n including substations and distribution facilities to serve anticipated load increases.

Electric property has increased almost sixfold during the past ten years and the 1959 amount to be added is greater than the total value of electric property in 1948. Rate reductions were made effective March 1, 1946, and the company has never applied for an increase in its rate schedules.

The installation of air conditioning equipment and other new appliances in existing homes together with extensive new home building, a field of great activity in our area, should result in additional future increases in average residential annual kilowatt hour use which increased 9.4% during 1958.

The United Illuminating Company

New Haven, Connecticut
WILLIAM J. COOPER, *President*

U ted Illuminating Com- ny in 1959 has undertaken an ,000 construction program in o meet the steadily rising load s of the metropolitan New and Bridgeport areas. It is a $50,000,000 program the y will carry out in the next ears to expand its facilities for and delivering electricity.

this year construction was on a power plant addition to w Bridgeport Harbor station. 0,000-kilowatt turbine-genera- ich will have twice the ca- of UI's largest unit, is sched- go into operation in the sum- 1961. During the next three two transmission lines are scheduled for delivery of bulk power at 115,000 volts to distribution points in the outlying suburban areas. In addition to these major projects, the company plans to build more new substations and to expand existing ones to increase power capacity and service reliability.

UI is located in an area that has a vigorous, diversified economy. New Haven is presently in the midst of one of the most extensive urban renewal and redevelopment programs in the country. Bridgeport is developing a similar program. The Connecticut Turnpike has opened hundreds of acres of land from one end of United Illuminating's service territory to the other for commercial and industrial development.

The amount of new industrial and commercial business UI is now negotiating is larger than at any previous time. This new business should materialize during the next three years. To stimulate more kilowatthour sales among domestic, commercial and industrial customers, the company's sales promotion activities have been expanded and intensified. This year hard-selling campaigns will be conducted on electric ranges, clothes dryers and water heaters. Participation in the electric industry's Medallion Home, Housepower, national residential sales and other programs will also be stepped up.

Upper Peninsula Power Company

Houghton, Michigan
WM. VEESER, *Assistant to the President*

e present service area of the pper Peninsula Power Com- as formerly served by six non- ted electric companies which ot st ong enough to plan and the facilities necessary to e exp nding electric power re- ents of the area. Several of mpa ies were owned and con- by in ustries which were in the s a a result of producing for t eir own needs and then g o he excess to outside cus- Co equently, these industries ot i erested in expanding the pow r phase of their business. rec his situation the Upper la Power Company was th gh the consolidation, in of t ee small utilities. This datio was followed by ac- the distribution and ssio properties of two utili- 95. doubling the size of the y), nd the construction of a ele ic generating station, ow ed with an iron mining company, to serve this newly acquired property. In 1958 the company acquired the distribution facilities of another small utility and began operating a new generating station owned and financed by a municipality, which station supplies the electric needs of the municipality, the newly acquired property, and existing company territory. Recently constructed transmission lines, 70 and 100 miles long integrated the aforementioned acquisitions and new plants with the balance of Upper Peninsula's system, exclusive of one district.

During 1959, a new generating station will be completed to supply the electric and live steam needs of a large new plant of The Celotex Corporation. The station, owned by the Power Company and called the John H. Warden station, after the company's president, will provide additional power for the expanding needs of the company. A 35-mile transmission line, to be completed in 1959, will link the station to the balance of the system. This year's plans include construction of a substation, substation expansion and some miscellaneous transmission and distribution line construction.

As the expansion program of the company continues, so does the diversity of its customers, and while at one time sales were related largely to the iron and copper projects, recently many other types of industries have entered the picture and with a wider range of customers in the territory, the company has a much firmer foundation. These customers include paper, lumber, and flooring mills, wallboard plants, creameries, dairies and fish processing plants, a large college, railroads and an Air Force base and radar stations.

The company's aggressive load building program reveals that over the past five years average annual use per customer has increased from 2,061, Kwh in 1953, about 14% under the national average of 2,345

(*Continued on page* 92)

Kwh, to 3,603 in 1958, which is 7% over the national average of 3,366 Kwh.

This load building program, which is being stepped up, includes a dealer cooperative plan for appliance selling. The program brought about a unique arrangement related to television set sales. Due to the distance that much of the company territory is from the telecasting stations, and the terrain, television reception under ordinary circumstances is below average. However, through a system of relay towers or "community television towers," which pick up the picture and relay it over a carrier cable to individual homes, reception is improved many-fold, as are television set sales. The company aids and promotes this program through a contractural arrangement whereby company poles are used to support the carrier cable.

The company's bi-monthly billing program initiated in 1958 will be completed in its seven districts in 1959.

In addition to integrating t... tems and constructing ad... power sources, the company ... tains interconnections and pow... tracts with five power sources ... than its own system and will co... negotiations in 1959 for an in... nection with a sixth concern, ... which is aimed at improving ... to customers in the company's ... tory.

Virginia Electric and Power Company

Richmond, Virginia
A. H. McDowell, Jr., *President*

In 1959 Virginia Electric and Power Company celebrates its 50th Anniversary. Now one of the nation's larger utilities the company had its beginning a half century ago. Following incorporation on June 29, 1909, it acquired at a foreclosure sale properties formerly owned and operated by 3 companies. These companies were doing an electric railway, and light and power business in and about Richmond and Petersburg, Virginia. Two years later the company expanded its operations to the Tidewater area through mergers with traction and power companies in Norfolk and Portsmouth, Virginia. A merger in 1944 with Virginia Public Service Company brought Northern Virginia, the Peninsula, portions of western Virginia and eastern West Virginia into the service area.

Today the company has 22 generating plants with a capability of 1,738,000 kilowatts. It serves 721,000 electric customers in a 32,000 square mile area in Virginia, North Carolina and West Virginia. In addition 94,000 gas customers are served in the Hampton Roads area of Virginia.

Construction expenditures in 1958 were $63,061,000, the largest annual amount ever spent by the company. Additions to electric property totaled $62,707,000 and gas and other property additions were $1,896,000. Over half of the amount spent on construction in 1958 was for new generating facilities. New 170,000 kilowatt generating units at Bremo power station and Yorktown power station were completed in 1958. Work continued on similar additions at the Portsmouth and Chesterfield power stations. Upon completion of the Portsmouth addition, scheduled for mid-1959, and the Chesterfield addition, scheduled for completion in 1960, capability of the company's s... will be 2,200,000 kilowatts, o... 4 times that of 10 years ag... 1959 construction budget ca... estimated expenditures of $5... 000. Continuing work on new ... erating facilities will require $1... 000 and $23,890,000 will be re... for transmission and distri... facilities, The remainder will be ... on improvements and replacem... meet and keep ahead of cu... needs.

The company in association ... neighboring utilities is constr... an experimental nuclear power ... tor project at Parr Shoals, ... Carolina. Successful developme... operation of this plant by the ... ciates could lead to the constr... of a large scale atomic energy ... by the company.

Washington Water Power Company

Spokane, Washington
Kinsey M. Robinson, *President*

During the year 1959, it is estimated that the following expenditures will be made:

(1) For new power generating facilities—$12,185,196 (includes $11,990,841 on Noxon Rapids).
(2) For new power transmission facilities — $5,579,451 (includes $1,800,246 on Noxon transmission).
(3) For new power distribution facilities—$2,498,990.
(4) For new gas facilities, all categories — $1,822,159 for mains, services and equipment.
(5) For general and miscellaneous construction—$566,039.

As of December 31, 1958, Noxon Rapids was 77 per cent complete. Estimated date of initial operation of Unit 1 is August 1, 1959, with Units 2, 3, and 4 following at three-month intervals.

WWP is now operating natural gas distribution facilities in Spokane, Pullman and Clarkston, Washington and in Coeur d'Alene, Moscow, Lewiston and Post Falls, Idaho.

WWP spent, in round figures, $32,450,820 for new and improved electrical facilities in 1958. At the end of the year the company was serving a total of 144,751 customers. Total kwh sales for 1958, 2,648,000,000. Total generating capacity (all ... and exclusive of Noxon) 4... kw.

In 1958 the company adde... miles of transmission lines a... miles of distribution. System p... 1957—595,000 kw; in 1958, 6... kw.

When the first two units at ... go on the line late in 1959 it w... 200,000 kw to the company's ... erating capability. The remainin... units will come in in the spr... 1960. The company has no steam ... erating plants.

WWP, along with Montana ... Portland General and Pacific ...

...nt, ...s formed the Pacific ...est Power Company. This ...y ha... before the FPC an ap... fo... a license to construct the ...Mou...tain Sheep dam on the Snake river between Idaho and Oregon.

High Mountain Sheep dam would cost approximately $287,000,000, would provide 3,250,000 acre feet of storage and its two powerhouses would have an ultimate capability of 1,520,000 kilowatts. It would be the biggest hydro project ever constructed by investor-owned utilities.

Western Light & Telephone Company, Inc.

Kansas City, Missouri

A. L. MULLERGREN, *Chairman of the Board*

...owi... a number of years ...heav... construction programs ...have put the company in a ...ble p...sition relative to genera... ...and transmission facilities, ...rn Light & Telephone Com... ...plans for construction for 1959 ...tively minor. The major pro... ...r the year is the building of 33 ...f 115 KV line, completing a ...e section between Dodge City ...beral, Kansas. With the com... ...of this section, the company ...ve in operation a 115 KV ...ission network that extends ...es from Smith Center, Kansas ...north to Liberal, Kansas on the south.

The company operates in an area which has experienced summer peak loads since 1953. The continuation of this trend and the inherent operating results have prompted the company to begin to develop ways to fill up the winter valleys. Additional emphasis is being given to the company's sales promotion program which attempts to coordinate and assist local electrical dealers, contractors and other allies, since the company does not merchandise appliances.

For the first time this year the company will begin to actively promote the sale of electric space heating for homes in the area. To this end the company has developed and put into effect a special low heating rate.

Also in 1959, the company will promote the sale of electric water heaters, an item which has received very little promotional emphasis in years past, but which will provide a substantial and desirable load.

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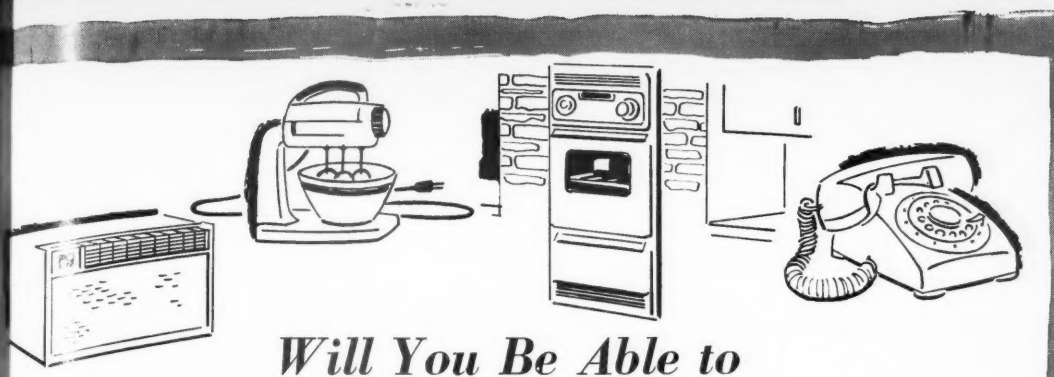

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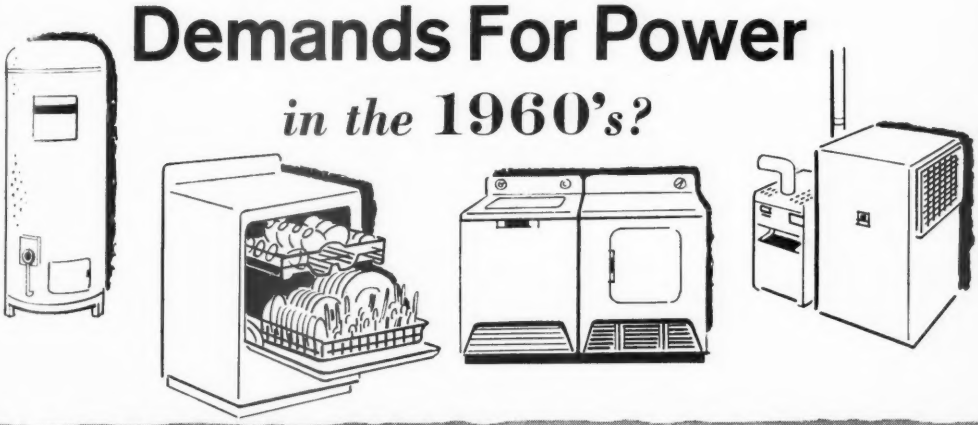

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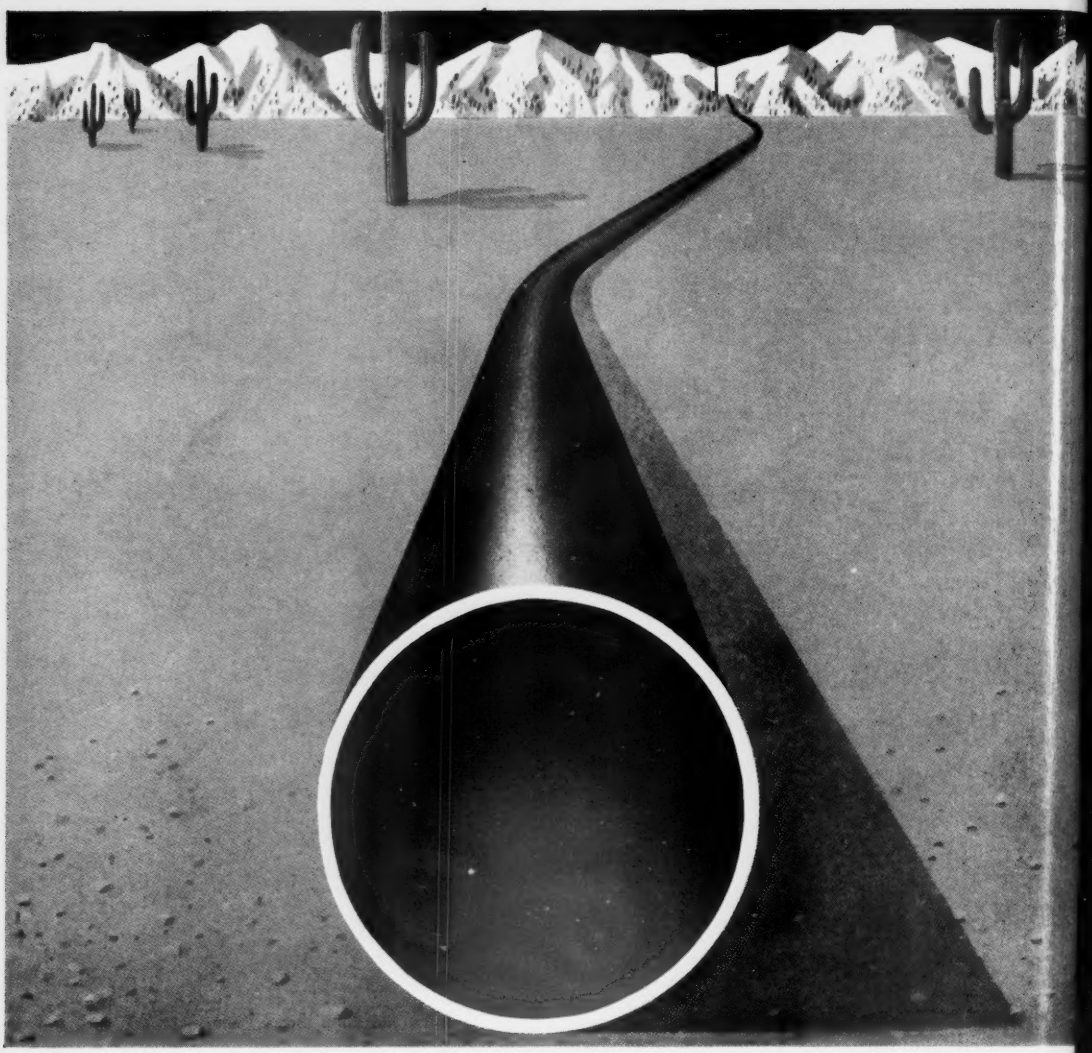

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defies 180°F. heat without sliding and −10°F. cold without crac

Allied Chemical Hotline Enamel's resistance to both high and low temperatures, as well as its greater durability, compared to asphalt base and other coatings, has been proved by laboratory tests, and on-the-job performance for leading public utility companies. Allied Chemical Hotline Enamel is derived from coal-tar pitch, thus possessing inherent protective properties against the damaging effects of water, soil chemicals and electrical currents.

Improves protection under these specific conditions:

1. On pipe-type cables or "oil-o-static lines" which are subject to internal electrical heat from high-voltage surges.

2. Hot gas pipelines, on discharge side of compressor where line is above 120°F.

3. Warm, swampy areas or other places where exce stress is encountered.

4. Areas where backfill and trenches are rough, rocky objects which normally penetrate softer coatings.

5. Pipelines (such as heated fuel lines) where temperat constantly high most of the time, but do not exceed 200°F. for short term exposure.

A staff of field service experts are at your call to g technical assistance that can save you maintenan and costs. **LAST WORD IN CORROSION PROTE**

PLASTICS AND COAL CHEMICALS DIVISION
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Allied Chem